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The Status of the Genus *Asclepias* in New Mexico

Eugene Jercinovic

6285 Algodón Road SW, Deming, NM 88030

The genus *Asclepias* contains about 120 species, most of which are native to the Americas. A recent summary of the genus in New Mexico lists 31 taxa. There have been several additions to the group since the publication of Martin and Hutchins *A Flora of New Mexico*. Below are a few comments on the group, and updated key to the species, and distribution maps for each taxon.

Since the late nineteenth century New Mexico has been carrying a phantom taxon in its flora, *Asclepias scaposa*. No specimens exist in local herbaria. Its presence in New Mexico depends on a single sheet at the Missouri Botanical Garden. R.E. Woodson, in his 1954 monograph of the genus *Asclepias*, describes the problem:

Asclepias scaposa has been rather an enigma since its description from a single fruiting specimen by Miss Vail in 1898. This, which remains the only specimen recorded from the United States [no longer the case] as well as the only fruiting specimen of the species, was found duplicated in both the Gray Herbarium and the herbarium of the New York botanical Garden without a number; in the herbarium of the Missouri Botanical Garden a third duplicate bears the number 7, which probably is an arbitrary number assigned by Engelmann and not a field number in the true sense. Without a field number, the actual place of collection of Wright's specimen cannot be ascertained; it appears more than possible that it may have been actually in Coahuila, considerably south of the present boundary of New Mexico.

The label on the sheet in question at MO shows: *Asclepias scaposa* Vail, New Mexico, Coll. C. Wright, and 1851. In the upper left corner appears No. 7, in quotes. It is on this basis that New Mexico is credited with this taxon. The herbarium database from the University of Arizona shows no specimens of *A. scaposa*. The herbarium database from the University of Texas at Austin shows one specimen from Brewster County (Big Bend) and one from Terrell County (immediately east of Brewster). These counties border the Mexican State of Coahuila, where a number of specimens of *A. scaposa* have been collected. Both are remote from New Mexico. The likelihood of *A. scaposa* occurring in the state is small, yet the possibility cannot really be eliminated.

Another taxon of question in New Mexico is *A. emoryi*. No specimens are listed in the New Mexico Biodiversity database or the SEINet database. Several collections originally designated as *A. emoryi* have been determined to be *A. oenotheroides* (Robert Sivinski, personal communication). Two specimens impinge on this taxon's presence in the state. The holotype (as *Podostemma emoryi*, US) was collected by C.C. Parry during the Mexican Boundary Survey, but the location given: "Rio Grande Valley below Dona Ana" is quite indefinite. In fact, the location shown on the sheet is "Texas or New Mexico." Wootton and Standley in their 1915 *Flora of New Mexico* state, "It is impossible to tell where the type was collected..." Wootton and Standley also indicate an incidence of *A. emoryi* at Mangas Springs in Grant County. It is interesting that Woodson shows *A. emoryi* only in Texas and the Mexican States of Nuevo Leon and Tamaulipas. It is also of note that Wootton and Standley's description of the hoods as 3.5 mm or less is significantly at variance with Woodson's description of "about 5 mm". Regardless of how these two collections are evaluated, they do not seem to define a viable collection within the state. The typical range of this species is from central Texas southward into Coahuila and Nuevo Leon in Mexico, but the herbarium database at the University of Texas at Austin shows a specimen from Ector County, Texas, whose western boundary is a mere 15 miles from Lea County, New Mexico. So, as with *A. scaposa* the presence of *A. emoryi* is unclear, but cannot be discounted, particularly in the light of the proximity of known collections.

A. hallii is another taxon for which no specimens appear in local herbarium databases. Two specimens are known from Conejos County, Colorado (Antonito), which were gathered about 5 miles north of the New Mexico border. Other Colorado collections have been made from Montezuma County (Cortez) and

(Continued on page 2, *Asclepias*)

Botanice est Scientia Naturalis quae Vegetabilium cognitioem tradit.

— Linnaeus



(*Asclepias*, continued from page 1)

Costilla County (San Luis) both of which border New Mexico. *A. hallii* has also been collected in San Juan County, Utah (SE corner). There is no record of this taxon having been collected in New Mexico, but due to the collections quite nearby, it is retained in the key below.

The range maps included here were prepared using online databases and through communications with individuals collecting around the state.

Key to the Species

- 1 Corolla lobes erect or spreading at anthesis...*A. asperula* (Decaisne) Woodson. We have two subspecies:
 - a Inflorescences pedunculate; hoods dark purple; leaves linear-lanceolate... subsp. *asperula* (Decaisne) Woodson SPIDER MILKWEED. Desert swales, sandy and rocky hillsides; oak and juniper communities.
 - a Inflorescences sessile or subsessile; hoods greenish-cream to pinkish; leaves more broadly lanceolate... subsp. *capricornu* (Woodson) Woodson ANTELOPE-HORNS. Prairies, plains, limestone or clay hills; occasionally openings in pine forests.
- 1 Corolla lobes reflexed at anthesis
 - 2 Horn absent from hoods or reduced to a small crest
 - 3 Leaves linear or filiform
 - 4 Hoods containing a small (sometimes horn-like) crest; anther wings with a spur at the base...*A. rusbyi* (Vail) Woodson RUSBY'S MILKWEED. Rocky soil in pine/oak, piñon/juniper communities, open pine forests.
 - 4 Hoods lacking horn or crest; anther wings without a spur at the base...*A. engelmanniana* Woodson ENGELMANN MILKWEED. Prairies and swales, open sandy hillsides, draws, washes.
 - 3 Leaves narrowly lanceolate or broader
 - 5 Leaves opposite, ovate to oval; flowers dark red...*A. hypoleuca* (Gray) Woodson MAHOGANY MILKWEED. Open pine forests. Southwestern.
 - 5 Leaves opposite to irregularly approximate; oval to narrowly lanceolate; flowers pale green...*A. viridiflora* Rafinesque GREEN COMET. Glades, prairies, rocky or sandy hillsides.
 - 2 Horn well developed
 - 6 Hoods or apical portion widespread from anther head
 - 7 Leaves filiform; hoods narrowly acuminate, 3-6 mm long...*A. utacrotis* Torrey LONG-HOOD MILKWEED. Dry hills and mesas, limestone ridges.
 - 7 Leaves ovate to ovate-lanceolate or oval; hoods narrowly attenuate, 10-14 mm long...*A. speciosa* Torrey SHOWY MILKWEED. Moist meadows, riparian areas, roadsides, open coniferous forests.
 - 6 Hoods erect to suberect, not spreading away from anther head
 - 8 Corolla lobes and hoods orange, rarely reddish or yellow...*A. tuberosa* Linnaeus subsp. *interior* Woodson BUTTERFLY MILKWEED. Prairies, thickets, open woods, canyons.
 - 8 Corolla lobes whitish, pinkish, greenish or purplish
 - 9 Hoods not longer than 2.5 mm
 - 10 Leaves filiform or linear
 - 11 Leaves whorled, occasionally opposite above
 - 12 Stem leaves (4) 6-13 cm long, often with opposite-leaved dwarf branches in axils; roots well-developed, woody...*A. subverticillata* (Gray) Vail HORSETAIL MILKWEED. Plains, mesas, moist areas, piñon/juniper or ponderosa communities, roadsides, sandy soils. Widespread.
 - 12 Stem leaves 1.5-6 cm long, without dwarf axillary branches; roots fibrous...*A. verticillata* Linnaeus WHORLED MILKWEED. Dry soils of prairies, thickets, open woods; sand dunes.
 - 11 Leaves approximate to alternate or spiral, occasionally verticillate below
 - 13 Horn subequal to hood...*A. cutleri* Woodson CUTLER'S MILKWEED. Dry sandy areas, dunes, gravelly areas of the northwesternmost portion of the state.
 - 13 Horn approximately 1.5-2 times as long as hood...*A. punila* (Gray) Vail LOW MILKWEED. Sandy soil, plains and low hills, mesquite prairies.
 - 10 Leaves narrowly lanceolate or broader (distal cauline leaves

sometimes linear in *A. uncialis*)

- 14 Plants low, mostly below 10 cm, prostrate to somewhat ascending
 - 15 Hoods pale
 - 16 Corolla lobes purple or purplish rose; hoods white...*A. uncialis* Greene WHEEL MILKWEED. Sandy or rocky prairies.
 - 16 Corolla lobes pale yellow or yellowish green; hoods yellowish...*A. macrosperma* Eastwood EASTWOOD'S MILKWEED. Dry sandy places in the northwesternmost portion of the state.
 - 15 Hoods reddish-violet
 - 17 Leaves tomentulose on leaf margins and midrib of abaxial leaf surface only...*A. sanjuanensis* Heil, Porter, & Welsh SAN JUAN MILKWEED. Sandy or sandy loam soils, usually in disturbed areas. San Juan River Valley endemic.
 - 17 Leaves densely white-tomentulose...*A. ruthiae* Maguire RUTH'S MILKWEED. Sandy and hard-packed loamy soils, desert scrub and gullies of the northwestern portion of the state.
- 14 Plants taller, erect or strongly ascending
 - 18 Stems (branches) 10-30 cm tall
 - 19 Corolla lobes 4-6 mm long, reddish-purple or violet...*A. brachystephana* Engelmann ex Torrey SHORTCROWN MILKWEED. Sandy or rocky plains, dry flats, gullies. Southern half of the state.
 - 19 Corolla lobes 3-4 mm long, bright pink or rarely white...*A. scaposa* Vail BEAR MOUNTAIN MILKWEED. Dry gravelly openings in oak scrub, mountainsides and flats.
 - 18 Stems (branches) 40-150 cm tall...*A. incarnata* Linnaeus SWAMP MILKWEED. Wetlands and marshes.
- 9 Hoods longer than 2.5 mm
 - 20 Hoods longer than 7 mm
 - 21 Horn reduced to an apiculate winglike crest adnate for its entire length to hood...*A. nyctaginifolia* Gray MOJAVE MILKWEED. Plains and mesas, swales, arroyos. Southwest corner and eastern plains.
 - 21 Horn adnate to near the hood tip, free portion falciform, arching over anther head...*A. oenotheroides* Chamisso & Schlechtendal ZIZOTES MILKWEED. Mesas, hills, thickets, roadsides in chiefly rocky clay soils, or sandy or rocky calcareous soils.
 - 20 Hoods shorter than 7 mm
 - 22 Leaves linear to filiform, plants suffrutescent to shrubby
 - 23 Stems (branches) 10-30 cm tall, hoods erose, dentate or 2-lobed...*A. quinqueidentata* Gray SLIMPOD MILKWEED. Rocky hills and arroyos. Southwestern.
 - 23 Stems (branches) 50-200 cm tall...*A. linaria* Cavanilles PINE NEEDLE MILKWEED. Open oak, pine, juniper woodlands; canyons and arroyos; dry rocky hills and slopes. Known only from Hidalgo County.
 - 22 Leaves narrowly lanceolate or broader
 - 24 Leaves sessile or subsessile
 - 25 Leaves narrowly lanceolate, somewhat conduplicate...*A. involucrata* Engelmann ex Torrey DWARF MILKWEED. Dry plains, mesas, gravelly hills; chaparral and arroyos.
 - 25 Leaves oblong, oval, ovate-lanceolate or suborbicular
 - 26 Stems 4-10 cm long...*A. nummularia* Torrey TUFTED MILKWEED. Dry mesas and slopes, rocky hillsides, arid grassland, dry ravines in gravel or clay. Grant and Hidalgo counties.
 - 26 Stems 30-70 cm long...*A. glaucescens* Kunth NODDING MILKWEED. Dry, rocky

(Continued on page 3, *Asclepias*)



(*Asclepias*, continued from page 2)

- slopes in open pine, juniper, or oak woods; roadsides and washes. Southern third of the state.
- 24 Leaves with petioles at least 1.5 mm long
- 27 Corollas pale green, pale yellow, or greenish yellow
- 28 Stems stoutly erect, longer than 25 cm
- 29 Herbage densely tomentulose; horns adnate to hoods for approximately half their length, narrowly falciform...*A. arenaria* Torrey SAND MILKWEED. Sandy areas. Eastern plains.
- 29 Herbage minutely puberulent; horns adnate to hoods for almost entire length, broadly falciform...*A. latifolia* (Torrey) Rafinesque BROAD-LEAF MILKWEED. Mixed prairies, high plains, roadsides. Widespread.
- 28 Stems ascending to decumbent or prostrate, generally less than 20 cm long
- 30 Leaf petioles 10 – 15 mm; hoods approximately 5 mm long...*A. emoryi* (Greene) Vail EMORY'S COMET. Sandy prairies and dry plains.
- 30 Leaf petioles 1.5 – 5 mm; hoods 2.5 – 3 mm long...*A. macrosperma* Eastwood EASTWOOD'S MILKWEED. Dry sandy places in the northwesternmost portion of the state.
- 27 Corollas pink, rose, or purplish
- 31 Hoods 5 – 6 mm long...*A. hallii* Gray HALL'S MILKWEED. Canyons and mountain-sides of piñon, yellow pine, and aspen belts.
- 31 Hoods 2 – 3 mm long...*A. scaposa* Vail BEAR MOUNTAIN MILKWEED. Dry, gravelly openings in oak scrub, mountain sides and flats.

Acknowledgments

I very much appreciate the information provided by Ken Heil, Chick Keller, Roger Peterson, and Richard Worthington on the localities of their *Asclepias* collections. Thanks also to Perk and Shelley Perkins for their efforts in spotting strange plants on their unusual acreage in Luna County.

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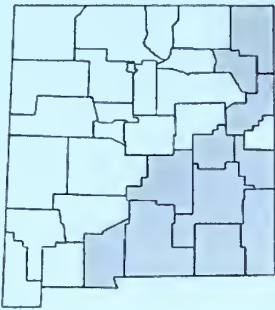
Botany is the natural science that transmits the knowledge of plants.

— Linnaeus

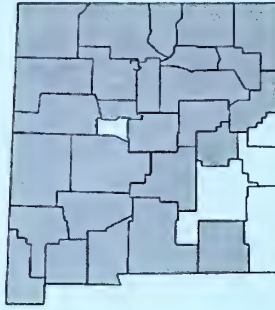


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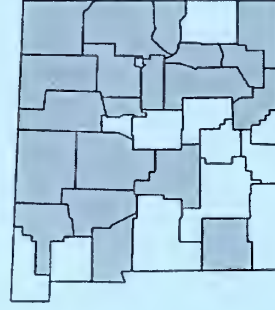
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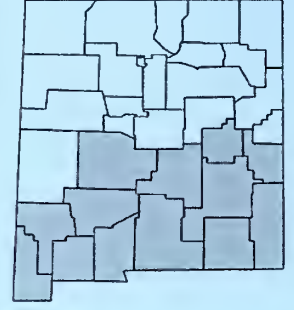
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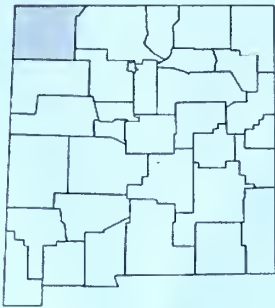
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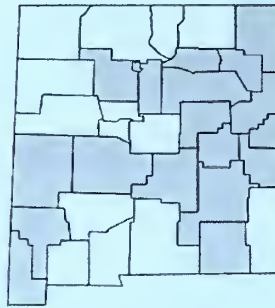
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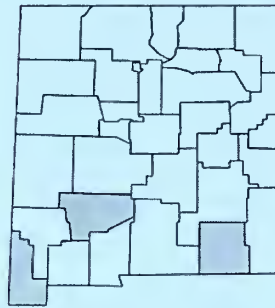
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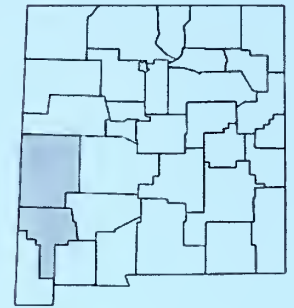
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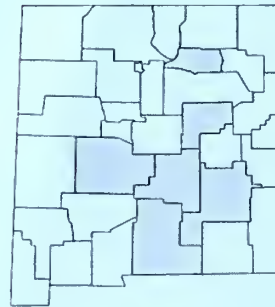
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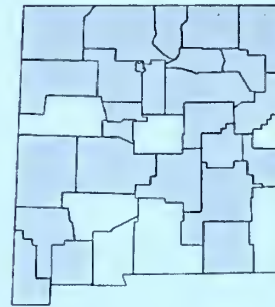
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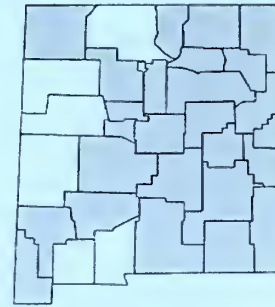
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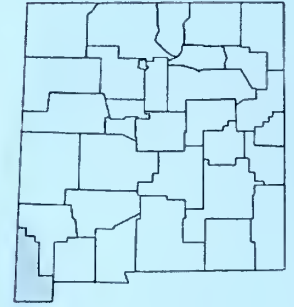
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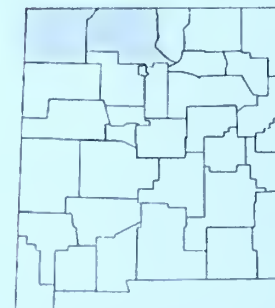
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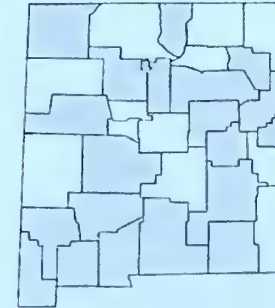
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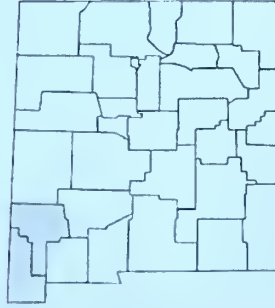
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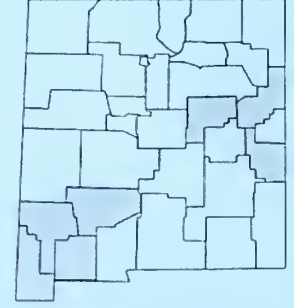
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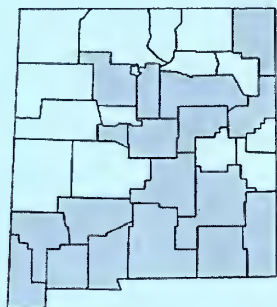


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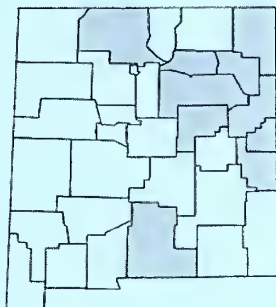


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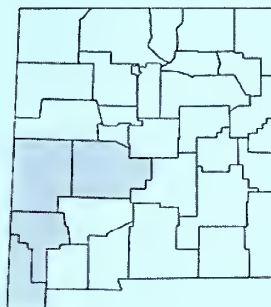
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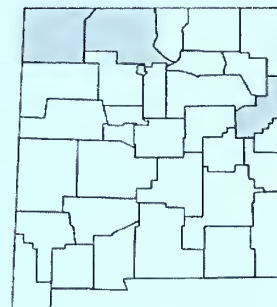
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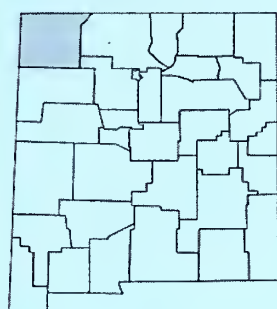
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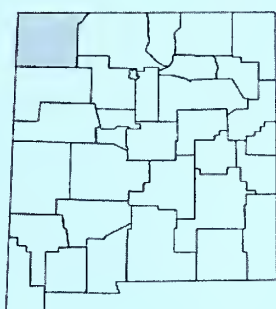
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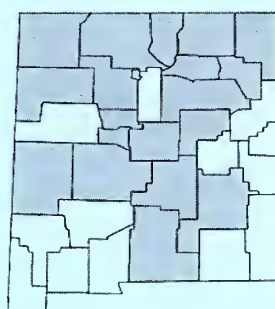
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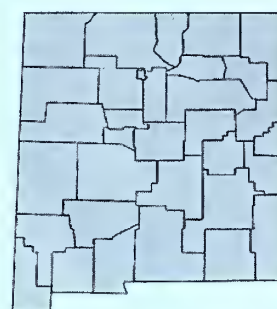
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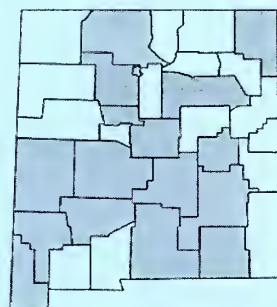
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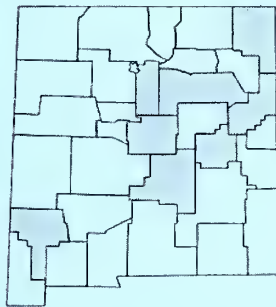
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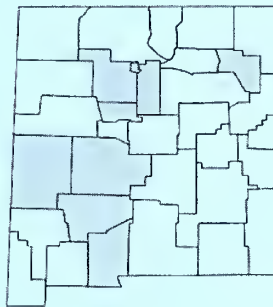
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interior



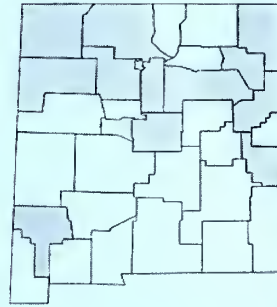
A. uncialis



A. verticillata



A. viridiflora





Notes on *Senecio* and *Packera* in Northern New Mexico

Chick Keller

4470 Ridgeway, Los Alamos, NM 87544

In the *Senecio/Packera* group are some of our most varied species occurring from our highest mountains to our lowest deserts. I do not know what identification problems beset our southern species, but the northern species pose some sticky ones. From my collections in Colorado and from mentoring by Bill Weber I have a fair collection of carefully identified specimens and will draw on these to help make differentiation easier. I would also like to thank Debra Trock (author of *Packera* in *Flora of North America*, Vol. 20) for very helpful comments which have changed my ideas on the presence of some "Colorado" *Packeras* in New Mexico. (Some of her comments are incorporated in the text in quotation marks.) I would also like to thank Al Schneider, Roger Peterson, Jim McGrath, and Ken Heil for helpful discussions. In this paper I will first give thumbnail discussions of the problem species followed by more detailed treatment of how to tell them apart. (Note that both *Intermountain Flora*, Vol. 5 and Dewitt Ivey's *Flowering Plants of New Mexico* contain excellent drawings of most of these species, but due to my error Dewitt labeled one incorrectly — *P. pseudaurea* should be *P. crocata*. The drawing in *Intermountain Flora* is correct.)

Species that cause the most problems are usually in pairs of look-alikes.

(1) *Senecio soldanella* vs. *Senecio amplexens* var. *holmii*. There appear to be no specimens of *soldanella* in the state. All the specimens I have seen were *holmii*. Side by side the two are fairly easy to tell apart, but since this is hardly ever the case in the wild, and because most of their defining characters overlap, clear differentiation has eluded most keys.

(2) *Packera wernerifolia* vs. *Packera cana*. There are two varieties of *wernerifolia*—*alpina* (above treeline) and *wernerifolia* (montane). Apparently both occur in New Mexico. *Alpina* is at least in the Costilla Peaks area while its montane cousin seems more widespread. *Packera cana* seems restricted to northern counties (Harding and Colfax). Collections of *cana* are rare—there are none from New Mexico in the UNM herbarium.

(3) *Packera hartiana/quaerens* vs. *Packera pseudaurea*. These two (*quaerens* is no longer thought to be separate from *hartiana*) are often confused but are rather easily separated on the basis of habitat as well as basal leaf characters.

(4) *Packera crocata* vs. *Packera dimorphophylla*. There are records of *crocata* from Rio Arriba and Sandoval Counties, and perhaps elsewhere. The problem with identification is that most keys require that *crocata* have orange or red flowers. But there are cases of *crocata* flowers also being yellow. Happily cauline leaves are different. So far all orange/red-petaled ones identified as *crocata* have turned out to be *dimorphophylla*.

(5) *Packera crocata* vs. *Packera pseudaurea*. If, as many keys do, *crocata* must have orange to brick red ray flowers, there is no problem in this separation. But, Trock writes that there are cases of *crocata* with yellow rays. Indeed it appears that most (all?) in New Mexico have yellow rays. When this occurs separation becomes more problematic because their habitats and altitudes are similar.

(6) *Packera streptanthifolia* vs. *Packera neomexicana*. I continue to have trouble separating these perhaps because they integrate. Also, most keys don't compare them directly, making it unclear just how similar they are. Both are definitely in the state but claims of the former need to be carefully made. (To further the confusion, *streptanthifo-*

lia grades into *hartiana*.)

(7) *Packera paupercula*. This species may not be in the state (although I have seen a potential specimen from northern NM in Roger Peterson's herbarium), and it doesn't occur in Colorado counties bordering New Mexico. It is somewhat similar to *pseudaurea* both in shape and habitat and so might be easily mis-identified.

(8) *Packera spellenbergii*, *Packera cliffordii*, and a newly discovered species. The first two of these are rayless and have been lumped together as *P. spellenbergii*. However, *cliffordii* is larger and found in a different habitat. Another species or variety has recently been discovered by Al Schneider and others. While the plant also grows in low mats, its flowers have showy rays. It might be a dryland variety of *P. wernerifolia* since its cauline lvs are vestigial.

Alpine Senecios

(1) In New Mexico's highest mountains, at or above tree line there are only two species of *Senecio* — *amplexens* var. *holmii* and *fremontii* var. *blitoides*. In Colorado there are at least two more, one of which (*Senecio soldanella*) has been incorrectly reported in New Mexico, and *Packera wernerifolia* var. *alpina*, which apparently does not occur in New Mexico either. Both can be easily confused with *holmii* if you are not familiar with them. In Colorado, *soldanella* is found only in the very highest places, above 12,500 ft. in scree slopes devoid of much other vegetation. *Holmii* is usually found lower with other plants in rocky areas. The two plants are quite distinct when viewed together but, because most of their characteristics overlap to some extent, keys have a hard time separating them. For example, *holmii*'s basal leaf blades are dentate and longish while *soldanella*'s are nearly entire and roundish. But I have seen *holmii* leaves that are nearly entire and *soldanella* with slightly dentate leaves. Similarly with ray flowers, which are long and reflexed in *holmii*, and shorter and not reflexed in *soldanella*, but there exist examples where these characters cross.

Soldanella's leaves are usually very maroon/purple, but *holmii*'s are sometimes the same color at least on their underside. And so what might a key use for definitive characters? I have found two which require digging up the plant. The roots are quite different, *holmii*'s being dark and fibrous while *soldanella*'s are thick, fleshy, and light colored. Also, the basal leaf petioles of *soldanella* are long and light colored because its caudex is submerged and long petioles are necessary to get the blades above ground. *Holmii* petioles are shorter as its caudex is at the surface. Given *soldanella*'s Colorado distribution (it does not occur in the southern Sangre de Christos), a New Mexico record is very unlikely but not impossible. Photos of any candidates should be circulated for verification.

(2) *Packera wernerifolia* is commonly an alpine species in Colorado, but it has a lower-altitude variety with different leaf characters that makes me wonder if this species should not be split into two varieties, low altitude (8,500-11,500) and alpine (above 12,000 ft.). Indeed Dorn (*Vascular Plants of Wyoming* 3rd Ed.) recognizes two such varieties. The low altitude specimens I have collected in Colorado (Dorn's variety *wernerifolia*) all had basal lvs that were long, narrow and entire, the blades cuneate (tapering gradually to the petioles). Tundra specimens, on the other hand, (Dorn's var. *alpina*) have more rounded leaves shallowly dentate and rather abruptly contracting to long petioles in a spoon-like shape. Several collections of the low altitude variety have been made in New Mexico, but to my knowledge only one of the alpine variety (Roger Peterson, Big Costilla Pk, ~12,000 ft.)

The defining character of *wernerifolia* is its scapose nature with none or only the most vestigial bracts on the stem. Otherwise it can be confused with *P. cana* which is usually densely hirsute, so much so that it looks gray. A good discussion of other differences between *cana* and *wernerifolia* is given in Debra Trock's paper "The Genus

(Continued on page 7, *Senecio*)



(*Senecio*, continued from page 6)

Packera in Colorado, U.S.A."

"There are two features distinguishing these two species: 1) *Packera cana* nearly always has more than 3 heads in the inflorescence. At high elevations the inflorescence is often very compact and the heads are small. *Packera wernerifolia*, on the other hand, normally has only 1 or two large heads. It can occasionally have 3-5 heads, in which case they are smaller than normal. 2) *Packera cana* always has some cauline leaves even if they are very reduced and mostly on the lower portion of the stem, while *P. wernerifolia* is nearly always scapose, or in some very robust specimens, may have a few bract-like leaves on the stem." My collections of *P. cana* from Colorado all have well-developed leaves.

Montane *Senecios*

(3) *Packera hartiana* and *Packera pseud aurea* can be separated usually by habitat. *Hartiana* prefers moist to dry understory from ponderosa to mixed conifer, while *pseud aurea* likes to have its "feet" wet and is most often found in open wet places or along streams, although there are cases where these overlap. Basal leaf shape is usually distinctive. Both have long petioles and minutely dentate leaf blades, but *hartiana*'s basal blades taper to the petiole while at least some of *pseud aurea*'s are definitely cordate. Cauline leaves also differ in that *hartiana*'s are usually small and shallowly dentate, while *pseud aurea*'s are often lyrate and at times large and deeply dentate. Phyllaries of both are essentially glabrous, but *hartiana* has tomentum at the base of the involucre especially when young.

(4) *Packera dimorphophylla* vs. *Packera crocata*. Both these species can have yellow, orange, or red rayflowers. Trock separates them by several characters: "*Packera dimorphophylla* var. *dimorphophylla* and *P. crocata* are easy to tell apart. The heads of *P. dimorphophylla* are in distinctly congested corymbs while those of *P. crocata* are open and loose. Also *P. dimorphophylla* has conspicuous calyculi, while *P. crocata* has no calyculi. The absolutely most distinguishing feature of *P. dimorphophylla* however are its clasping cauline leaves." However specimens annotated by Trock at UNM as being *P. crocata* look very similar to a Utah endemic, *P. dimorphophylla* var. *intermedia*, and since none of these has orange petals, I am leaning towards saying *crocata* may not occur in N.M. and these are instead range extensions of the Utah variety. More study is needed here.

(5) Since some specimens of *Packera crocata* have yellow rayflowers, it becomes necessary to distinguish it from *P. pseud aurea* with which it co-habitates. This is done most easily by examination of the basal leaves. Both of these species have long-petioled basal leaves and both can have truncate bases. But, true to its name (*pseudo-aurea*), this species has basal leaves similar to those of its eastern relative, *P. aurea*, being very dentate and generally thick. *Packera crocata*, on the other hand, has nearly entire blades which are very thin. See note about *crocata* at the end of (4).

(6) It is often very difficult to separate *Packera streptanthifolia* from *P. neomexicana*. At their extremes there is little problem, especially in Colorado, but in New Mexico the extremes are seldom met and the "look alikes" abound. This occurs to the point where I'm beginning to wonder if these are really two different species or simply a gradation from one to the other. For example, in the Jemez Mountains, *streptanthifolia* seems to dominate on the western side where non-volcanic soils predominate (although even there many apparent *streptanthifolia* turn out to be *neomexicana*). On the eastern side of the Jemez where nearly everything is volcanic, *streptanthifolia* seems to be absent.

One often-mentioned character of *streptanthifolia* is the thickish, turgid leaves. But I have collections from Little Costilla Peak (annotated by Trock) that are glabrous but with thin, non-turgid leaves.

On the east side of the Jemez *P. neomexicana* can also have thick-turgid leaves. Finally I have a very tomentose specimen of *streptanthifolia* from the western Jemez (collected by B. Reif and annotated by Trock). So, are these intergrades?

Most texts agree that one reliable difference between *streptanthifolia* and *neomexicana* is that the former has glabrous achenes (cypsellae), and the latter has hairs at least on the ridges. Another potential character is noted by Trock: "The vast majority of the *Packera*'s that I've collected from New Mexico, especially early in the season are *P. neomexicana*. I only have a few records of *P. streptanthifolia*, and they don't flower until late summer."

Trock also says: "The leaf blades of *P. neomexicana* are narrow – usually lyrate or lanceolate. *P. streptanthifolia* is variable, but the blades tend to be more rounded, ranging from orbiculate to spatulate. Also *P. neomexicana* is always tomentose to some degree and *P. streptanthifolia* rarely is (and then usually only in the leaf axils)". This last character is used in many keys to separate them, but I find it often unsatisfactory. Thus identification of a specimen usually is done by a vote compiled from each of these characters. However, for me there are just some specimens that cannot be certainly identified.

(7) *Packera paupercula* resembles *pseud aurea* and grows in similar wet habitats. It is distinguished by its deeply scalloped cauline leaves. The scallops are so deep and internally rounded that there is often hardly any leaf left. Basal leaf blades are very long and thin, and 5-7 times longer than wide. It is found in very wet meadow conditions. *Packera pseud aurea* has deeply dentate basal and cauline leaves but none are as long nor as deeply scalloped as *paupercula*. As noted above, *P. paupercula* may not be present in the state, but it should be looked for.

(8) Currently *Senecio cliffordii* is thought to be the same species as *Packera spellenbergii*. Both these plants are rayless, but *cliffordii* is from northwestern New Mexico and south-central Utah while *spellenbergii* is from the northeastern plains. Thus the ranges of these two species are widely separated. *Cliffordii* approaches *spellenbergii* in general aspect, but is a larger plant with longer, broader leaves, less tomentum, and has nearly hairless achenes. More collections of *cliffordii* will be needed to determine if indeed it really is a different species.

A third short, mat-forming species was discovered only a year ago and so has yet to be described. From its photos it appears to be a floccose version of *P. wernerifolia* with showy-petalled flowers.

Conclusion

Perhaps it might be well to end with another quote (private communication) from Debra Trock, who has looked at thousands of *Packera*.

"Welcome to the world of *Packera* (just kidding). Nearly all of the species in the Rocky Mountains are difficult for precisely the reasons noted here. ... These things probably do interbreed with each other where they come into contact. Barkley used to hold up his hand, point to the tips of his fingers and indicate that the tips represent our concept of each of these difficult species, but the bulk of the hand represents the majority of the plants that you find, with intergradation common place."

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Kelly Allred
The New Mexico Botanist
MSC Box 3-I
New Mexico State University
Las Cruces, NM 88003
or
Email: kallred@nmsu.edu

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Kelly Allred

Plant Distribution Reports

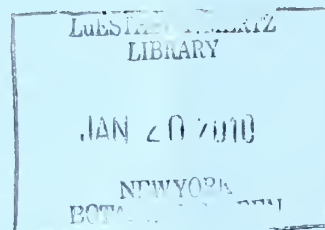
New records and significant distribution reports for New Mexico plants should be documented by complete collection information and disposition of a specimen (herbarium). Exotic taxa are indicated by an asterisk (*), endemic taxa by a cross (+). Comments [in brackets] are the editor's.

- Russ Kleinman [25 Oxbow Drive, Silver City, NM 88061]
Najas guadalupensis (Sprengel) Magnus (Hydrocharitaceae: Guadalupe Water Nymph): Grant County: Bear Canyon Lake, Mimbres Valley, growing with *Potamogeton foliosus* along north shore, 6100 ft, 4 November 2009, R. Kleinman 2009-11-4-1 (Dale A. Zimmerman Herbarium, Silver City). [Apparently, the only known locality for this species thus far in the state is Bear Canyon Lake; this marks the second collection from there]
- Kelly Allred [Department of Animal & Range Sciences, New Mexico State University, Las Cruces, NM 88003]
**Hedera helix* Linnaeus (Araliaceae, English ivy): Chaves County: Roswell, growing along south side of the Hondo River, midway between Summit and Union streets, N33°22.681 W104°32.287, 3600 ft, 17 Nov 2009, Sandra Barraza s.n. (NMCR). [first report of this common ornamental escaping and persisting in the wild in NM]
- Chick Keller [4470 Ridgeway, Los Alamos, NM 87544]
Packera wernerifolia var. *alpina* (Asteraceae): Taos County: Costilla Massif, above south fork of Willow Creek, north-facing slope, N36°58'30" W105°19'30", 12,050 ft, 26 June 1982, Roger Peterson #82-169 (New Mexico Natural History Institute Herbarium). [first report of this variety from NM]
- Reif et al. 2009. [see Botanical Literature of Interest; specimen data are online at <http://www.rmh.uwyo.edu/>]
Lomatium grayi (Coulter) Coulter & Rose (Apiaceae, Gray's biscuit-root): Rio Arriba County. [verifies earlier questionable reports for NM]
Lomatium triternatum (Pursh) Coulter & Rose var. *platycarpum* (Torrey) Boivin (Apiaceae, nineleaf biscuit-root): Rio Arriba County. [first report for NM]
**Hieracium floribundum* Wimmer & Grabowski (Asteraceae, pale hawkweed): Rio Arriba County. [first report for NM]
Descurainia pinnata (Walter) Britton var. *paysonii* Detling (Brassicaceae, tansy mustard): Rio Arriba County. [verifies earlier questionable reports for NM]
Silene drummondii Hooker var. *striata* (Rydberg) Bocquillon (Caryophyllaceae, Drummond's catchfly): Rio Arriba County. [first report for NM]
**Chenopodium capitatum* (Linnaeus) Ambrosi var. *capitatum* (Chenopodiaceae, strawberry blite): Sandoval County. [first report for NM]
Astragalus cerussatus Sheldon (Fabaceae, powdery milkvetch): Rio Arriba, Taos counties. [first report for NM]
Epilobium campestris (Jepson) Hoch & W.L. Wagner (Onagraceae, smooth willow-herb): Rio Arriba County. [first report for NM] ©



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William R. Buck
Institute of Systematic Botany
New York Botanical Garden
Bronx, NY 10458-5126, U.S.A.



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Important Notice

This marks the last issue of The New Mexico Botanist newsletter that will be mailed to subscribers. Beginning with issue 51, we will only send via email digital (pdf) copies of the newsletter. The newsletter will continue to be available online at <http://aces.nmsu.edu/academics/rangescienceherbarium/index.html>. If you wish to continue to receive the newsletter via email, as a pdf, please send us (kbustos@nmsu.edu) your name and email address, and we will begin assembling the email distribution list. Thank you for your cooperation. This will be a significant savings for our beleaguered budget.

From Farming to Floristics: William C. Martin (1923 – 2010)

Eugene Jercinovic

6285 Algodón Road SW, Deming, NM

[Ed. Note: It is fitting that the 50th issue of THE NEW MEXICO BOTANIST honors one of our state's most distinguished plant scientists, and coauthor (with R.C. Hutchins) of the monumental *A Flora of New Mexico*. W.C. Martin came to New Mexico just a little over 50 years ago.]

Call it destiny, or serendipity, that soft force which propels a person from universally uncertain beginnings to a life's work. It is mostly un contemplated, at best ill-defined. Yet somehow the gathering of experiences creates some sense of purpose and direction. Sometimes it takes a man from the simplest agrarian background to a formal career in science. So it was with Bill Martin, University of New Mexico professor and author.

William Clarence Martin was born on November 27, 1923 in Dayton, Kentucky, a small town across the Ohio River from Cincinnati. A brother, Eugene, was born on October 14, 1925. Their father, William Clarence Martin Sr., worked in an office supply company spray-painting office furniture. In 1927 the family moved to Ripley County in southeastern Indiana to build a new life on a farm of 100 acres about a mile south of Delaware, IN. "Ours was a fairly typical farm, with horses, mules, beef cattle, milk cows, hogs and chickens. Dad raised all manner of vegetables, plus corn, soybeans, hay, oats, buckwheat and tobacco." Bill and his brother had numerous farm chores, from milking the cows to picking hornworms from the tobacco plants.

A common view in the agricultural Midwest in this era was to get education out of the way before boys grew big enough and strong enough to be of real use on the farm. His mother, Alline Ormes Martin was instrumental in his early education. "I started school a few months before I turned five, but I was at least somewhat prepared for school work, because Mom had taught me to read in our McGuffey Eclectic Reader when I was barely four." His first school was a one room rural "little red schoolhouse," made of brick, called Union School, complete with inkwells in the right hand corner of the desks. The restrooms were outside, side by side. Bill spent five years at Union School. In 1933 the family moved to a much smaller farm near Delaware. Bill entered the Delaware Grade School which contained grades one through eight. This school was considerably more formal than the Union School. He remained there until a Ripley County consolidated high school was completed in 1936 in Napoleon, about 8 miles from Delaware. At this point in his life, Bill showed little interest in science. In fact he was a charter member of Future Farmers of America at his new school. He graduated with twenty others in 1941.

Meanwhile, Bill did his part on the family farm. Life was still quite simple there. "I prepared all my homework by the light of kerosene lamps until I was a junior in high school." In 1937, the Martins relocated to another farm "a couple of miles northeast of Delaware." In 1939, there was another move to a farm complete with a running stream called Castetter Creek, a bit west of Delaware. Bill and his brother delivered newspapers and made extra money at 75 cents a week. After 1939, Bill and his father worked at the Milan Furniture Factory, about 5 miles away. Bill worked as an apprentice on the molding machine starting out at 20 cents an hour. Even with school, the newspaper route, the furniture factory and the farm, Bill found time to hunt fossils and gather ginseng roots, which sold for \$16 per pound.

During his last two years of high school, Bill saved enough money to pay part of his way to attend college. In the fall of 1941 he enrolled at Purdue University with the intention to study horticultural science. Pearl Harbor changed everything. By the fall of 1942 Bill realized that military service was inevitable. Early in 1943 he tried enlisting in the Marines and the Navy, but for both the quotas were full. The army had no quotas and in the late winter of 1943 he was inducted into the U.S. Army at Ft. Benjamin Harrison near Indianapolis. Two weeks later he was sent to Camp Swift near Austin, Texas for basic training. He was assigned to the 389th Field Artillery Battalion in the 97th Infantry Division. After basic training his unit moved on to field maneuvers in "the piney woods and swamps of Louisiana." Shortly thereafter he was transferred to the Army Specialists Training Program for engineering training at Louisiana State University and then to the College of Mines and Metallurgy (now UTEP) in El Paso, Texas. By the summer of 1944 the army decided it wouldn't continue the ASTP program and Bill rejoined his old unit in Ft. Leonard Wood in Missouri. Bill signed up to become a paratrooper, but was picked to go to aerial defense machine gun school in South Carolina. After returning to Missouri the army gave Bill his first taste of teaching. "So the army

(Continued on page 2, W.C. Martin)



Botanice est Scientia Naturalis quae Vegetabilium cognitioem tradit.

— Linnaeus



(W.C. Martin, continued from page 1)

people assigned me to the instructor's hand to hand combat school...After training, my assignment was to instruct our unit, a class of about 175 — guys all bigger than me — to the finer points of hand to hand combat, including knife fighting. I guess I had learned the techniques sufficiently, because I had to show a lot of big guys that a little fellow like me could defend himself." Anyone who knew Bill would find this unimaginable.

Bill's unit was ordered to Camp San Luis Obispo, California for amphibious warfare training in preparation for duty in the South Pacific. The men took initial training there and then were sent to other camps in southern California to be trained in the use of landing craft. After training had been completed, the army decided the unit was needed in the European theater. In February 1945 they reached the east coast and two days later left on the 12 day Liberty Ship journey to Europe, arriving at Le Havre, France in early March. The 97th moved north through Belgium and entered Germany near Aachen. They tasted their first action on the west bank of the Rhine River. "It was there, after the German shells began dropping in, I became one of the fastest foxhole diggers anyone has ever seen." Bill's duty initially was as a .50 caliber machine gunner and an anti-tank gunner. Later he was assigned to the laying and repairing of battlefield phone lines. "That meant that we might have to crawl along in mud or snow toward an observation post, in pitch darkness, with a telephone line in one hand and a rifle in the other, all the time looking for a break in the line. Often German and American machine gun fire and mortar bursts were too close for comfort." Bill also helped to detect and clear land mines. The 97th had become part of Patton's 3rd Army and took part in the Battle for the Ruhr Pocket which resulted in the surrender of thousands of German soldiers. "During that action, we fired night and day, three howitzer rounds per minute." As spring advanced, the army swiftly moved across Germany and into Czechoslovakia. By mid-May the shooting was over in Europe.

Bill's unit returned to the United States and the men were given 30 days furlough with the understanding that they would reassemble and participate in the invasion of Japan. The men reported to Ft. Bragg, North Carolina for additional training. They then boarded a train for a seven-day trip to Ft. Lawton near Seattle where the 97th was assembling. However almost every man in Bill's battalion — the 389th — came down with amoebic dysentery and the 97th left without them. The 389th was broken up and given stateside duty. Bill was discharged from the army on Valentine's Day, 1946. He had lost one uncle in combat, and another uncle and his brother were seriously wounded.

Bill's last duty station was at Camp Atterbury about 20 miles south of Indianapolis, Indiana. After he left the army he was only about 50 miles from Middletown in Henry County, where his parents were living. He stayed with them for a time and then decided to hitchhike to see his brother at Ft. Sam Houston in San Antonio, Texas. His brother, Eugene was still in the army after being wounded in Europe. After returning to Middletown, he took a trip back to his old haunts in Ripley County to visit old friends and families. He made a special point of seeing a girl named Evelyn Hastings who had lived on a farm sharing a fence with the Martin farm when Bill was in high school. He even went to Easter Sunday services at her church on April 21. By the end of spring, Bill had made the decision to return to Purdue in the fall.

By September, he was back in West Lafayette enrolled in the Division of Forestry of the School of Agriculture of Purdue University. He soon switched to the Department of Horticulture. After rooming with relatives for a while, he bought an old house in Lafayette, where he and a few other students lived. On June 14, 1947 he and Evelyn Hastings were married. The newlyweds continued to live in Bill's house with four others. Bill and Evelyn both worked at Sears to provide income. Their first child, William David, was born in 1949. Bill graduated in 1950 with a degree in horticultural science.

Bill landed a job with Smith Nursery in Muncie, Indiana. They sold their house in Lafayette and bought another in Middletown, about 12 miles from Muncie. Bill worked at the nursery for about a year and then got into managing apple orchards. It wasn't the most lucrative of occupations so he went to work for General Motors in a plant that produced automobile lighting equipment. He then joined the Allison Aircraft Engine division in Indianapolis. The long drive to Indianapolis became wearisome and he went to work at the Kaiser-Willis Company in Anderson, Indiana, which manufactured gears for jet engines and automatic transmissions. The plant closed its operations in 1954. Bill needed to make another change. "For a long time, I had wanted to embark on a career in biological science and this seemed to be a perfect time to make a clean break with automobile and aircraft production. So I applied to the Indiana University Graduate School for advanced studies in botanical

sciences."

So at age 30 Bill, with Evelyn and by this time their three children David (William), James and Barbara, moved to Bloomington, Indiana. Bill held a teaching assistantship and Evelyn worked full time at a dry cleaning establishment. "Those were really busy years for both of us, early morning to midnight everyday." Since his interest was taxonomic botany, he studied under Dr. Charles Heiser, a renowned sunflower specialist. Bill also served as curatorial assistant at the herbarium. As part of his research, he made numerous field forays all over the south-central and southeastern states collecting sunflowers. He completed his Masters in 1956 and his Ph. D. in 1958, with his dissertation on the Biosystematics of *Helianthus angustifolius* and Related Species.

Bill sent out applications for employment to several schools. He decided to accept a position at the University of New Mexico. He had been through the area on troop trains during the war. The west was new and different, a treasure trove for a botanist with a passion for floristics. "It was a change. I don't think that Evelyn was particularly thrilled when we came through the canyon. She was a little shocked I'm sure, but after we'd been here a year or so we had no wish to return to the east anymore." Bill quickly became immersed in teaching as well as learning about the geography and the plants of New Mexico. He got to know the faculty. One member, at that time the longest serving member of the Biology Department in the school's history, Dean of the Graduate School, and Vice President of the University, was Dr. Edward Castetter, a curious reminder to Bill of his youth along Castetter Creek in Ripley County.

In 1961, Castetter retired from his extensive administrative responsibilities at the University. Bill worked with Castetter a great deal. He often assisted with proofreading. The two produced *A Checklist of Angiosperms and Gymnosperms of New Mexico* in 1970. After retiring, Castetter still had two major projects he wished to complete: a complete treatment of the cacti of New Mexico and the preparation of a new flora of the state. He decided to devote his time to the study of cacti and suggested that Bill undertake the project of writing a new flora of New Mexico. Bill involved his graduate students in gathering floristic data and used his summers to explore the state (and the southwest in general) for plants. In the summer of 1965 Bill, with Loren Potter from UNM, Dale Smith from the University of California, Santa Barbara, and Neil Osborne from the University of Southern Colorado operated a summer field botany institute for advanced graduate students at UNM's D.H. Lawrence Ranch near Taos, New Mexico. In 1967, Bill and Dale Smith spent the summer studying alpine phlox in the central and southern Rocky Mountains. In 1968 a man by the name of Charles R. "Bob" Hutchins, whom Bill had gotten to know through the American Association for the Advancement of Science (AAAS), moved to Albuquerque to pursue an advanced degree under Bill. Bob rapidly became absorbed in the flora project, and though he did not choose to complete his studies, became Bill's close friend and dedicated himself to the project for the next twelve years. It is hard to conceive of the difficulty of this undertaking. There were no computer databases. Everything was done with paper, pencil, typewriter and file folders.

Bill served as Assistant Professor of Biology from 1958-1965, Associate Professor of Biology from 1965-1971, and Professor of Biology from 1971-1989, as well as Curator of the Herbarium from 1958-1989. During a leave of absence from UNM he served as Senior Curator of Botany at the Los Angeles County Museum of Natural History from 1970-1972. At the same time he was Adjunct Professor of Biology at the University of Southern California. He remained a Research Associate at the Museum of Natural History for the remainder of his career.

After returning to UNM in 1972, Bill worked on a diversity of projects, numerous botanical surveys, the chemotaxonomy of *Ribes*, the chemotaxonomy of *Astragalus* and *Oxytropis*, natural succession on strip-mined land, and germination requirements of plants of arid lands. Of course, considerable energy went into the effort to finish the flora of New Mexico project. By the late 1970's most of the research was as complete as possible for a continuously evolving topic. Bill began assembling the massive document. "The typing was awfully time consuming. I'd come home to supper and go back to work and type a while."

The prospect of finding a publisher was daunting. Bill tried to involve UNM Press, but the task was too large and the audience too small to pique their interest. Undaunted, Bill typed on, while Bob Hutchins prepared range maps. Clayton Hoff, a parasitologist in the department would get together with Bill every morning to proofread. Somehow, by some route unknown to

(Continued on page 3, W.C. Martin)



(W.C. Martin, continued from page 2)

Bill, J. Cramer, a German publisher, heard about the project and contacted Bill. Bill, Bob and everyone associated with the flora were ecstatic. For the next year and a half sections of the flora were mailed to Germany by "Santa Fe Bill", as he was affectionately known at J. Cramer. There was no email. There were no word processors. "That was a challenge. Sent it in sections, usually a hundred or two hundred pages at a time. But there were 2600 pages all together. Took a lot of mailing back and forth, a lot of postage." The *Flora of New Mexico*, in two volumes, appeared in 1980-81. Bill and Bob agreed that their final product was not all they had wished it to be. There were omissions and errors, but after so many years, there simply wasn't the energy to pursue the project further.

Over the years, Bill taught 19 different classes. He advised more than 60 graduate students involved with monographic studies of *Castilleja*, *Senecio*, and *Cirsium*, and floristic studies of the Jemez Mountains, Redondo Peak, Mt. Taylor, the Manzano Mountains, Wheeler Peak, the San Andres Mountains, the Animas Mountains, the Ladron Peak/Sevilleta area, the Datil Mountains, and the Grants lava beds. During the 1980's, Bill continued his association with Bob Hutchins, publishing three books in conjunction with Robert DeWitt Lively: *Spring Wildflowers of New Mexico* (1984), *Summer Wildflowers of New Mexico* (1986), and *Fall Wildflowers of New Mexico* (1988). Also, in this decade, Bill and Loren Potter put together a summer course for graduate students to study and collect plants in the western U.S. The group logged more than 5000 miles in eight states. Bill also continued his connection with the Los Angeles County Museum, making several visits to the Hawaiian Islands to study rare and endangered plants. These forays were to backcountry areas to the islands of Hawaii, Oahu, Maui, Kauai, and Molokai. Bill noted, "We were able to locate some plants that had not been seen for 50 years or more." While there, he was able to reconnect with an ex-student who earned a Masters at UNM, Warren L. Wagner, then Associate Botanist at the Bishop Museum in Honolulu.

Late in his career he and Evelyn purchased 31 acres of ponderosa forest

land in Grant County, a few miles north of Silver City. "Early in our marriage, I promised Evelyn a 'cabin in the woods'. Now that we had the woods, it seemed logical that we should have the cabin." Bill retired from the University in 1989. Soon thereafter Bill and Evelyn designed an 860 square foot cabin. Construction, plumbing, and wiring were effected by the family. Bill, Evelyn, son Dave and daughter-in-law Dottie, daughter Barbie and son-in-law Dan, and son Jim all worked on it, mostly with the use of hand tools. Away from academia, Bill remained active. For a number of years he served on the botanic garden advisory committee, which gave rise to the Rio Grande Botanic Garden. He also served on the La Semilla Advisory Council for the New Mexico State Land Commissioner, Dr. Ray Powell. Bill gave numerous lectures about wildflowers and many other subjects to various community groups. The Martins became very interested in their family histories and began serious genealogical research, including trips to Canada and London.

The twilight of any career is necessarily bittersweet. Bill's retirement was probably longer than many – more than 20 years. He was as active as he could be, but time passed. He retained an essential joy in what he had contributed, particularly to those he had sought to educate and motivate in his many years of teaching. Indeed, his graduate students have contributed much. Warren L. Wagner became curator of the National Herbarium at the Smithsonian Institution and world expert in the family ONAGRACEAE (evening primrose) as well as President of the American Society of Plant Taxonomists. Ray Powell served two terms as Land Commissioner of New Mexico and is now Director of the Jane Goodall Institute's Root and Shoot Program. Reggie Fletcher spent a distinguished career with the U.S. Forest Service. Paul Knight spent 12 years as botanist for the New Mexico Natural Heritage Program. There are many others. In his last decade he was honored with the naming of *Cirsium ochrocentrum* var. *martinii*. Although he would never have really supported the naming of a plant for himself, there is little doubt that he was touched by the gesture of UNM Ph.D. candidate Patricia Barlow-lick.

Bill died quietly in his sleep on January 18, 2010.

©

Plant Distribution Reports

New records and significant distribution reports for New Mexico plants should be documented by complete collection information and disposition of a specimen (herbarium). Exotic taxa are indicated by an asterisk (*), endemic taxa by a cross (+). Comments [in brackets] are the editor's.

— Jim McGrath [20 Robin Ct., Edgewood, NM 87015-7908]

Tripleurospermum inodorum (Linnaeus) Schultz-Bipontinus (Asteraceae, false mayweed): Rio Arriba County: Floodplain of Navajo River about 1.2 mi NE of Dulce, UTM: 0324578E, 4092099N Z13 (NAD 27 CONUS), 6800 ft, SE edge of shining willow (*Salix lucida* ssp. *lasianдра*) stand, also growing with *Rudbeckia laciniata*, *Ambrosia psilostachya*, *Elymus repens*, *Poa pratensis*, 17 June 2009, Jim McGrath 874 (UNM); same population, 21 Sep 2009, Jim McGrath 933 (UNM). [first report for NM]

— Kline & Sorensen, 2008 [see Botanical Literature of Interest]

**Agrimonia parviflora* Aiton (Rosaceae, harvest-lice): Santa Fe County: in 1847, Fendler s.n. (BM). [probably a one-time exotic introduction from the east; unlikely that it still occurs in NM]

— Holmes et al., 2008 [see Botanical Literature of Interest]

Koerberlinia spinosa Zuccarini var. *wivaggii* Holmes, Yip, & Rushing (Koerberliniaceae, crucifixion-thorn). [this is a new name for all our material; var. *spinosa* is to be found to the east and south]

— Roger Peterson [1750 Camino Corrales, Santa Fe, NM 87505]

Carex lachenalii Schkuhr (Cyperaceae): Taos County: Sangre de Cristo Mountains, Costilla Massif, 0.68 km northeast of El Vintero,

N36°57'45" W106°19'53", occasional in shallow meltwater with *Deschampsia cespitosa*, *Podistera eastwoodiae*, *Juncus drummondii* in alpine depression, 3815 m. elev., 18 Aug. 1982, Peterson 82-424 (NMC). Determined by W.A. Weber. [first report for NM]

Eriophorum altaicum Meinshausen (Cyperaceae): Taos County: Sangre de Cristo Mountains, Costilla Massif, northeast foot of El Vintero, N36°57'46" W105°20'03", with *Carex nova* in shallow meltwater below large snowbank, a single plant found, 3840 m. elev., 25 June 1982, Peterson 82-152 (NMC). Determined by W. A. Weber. [first report for NM]

Chionophila jamesii Benth in de Candolle (Plantaginaceae): Taos County: Sangre de Cristo Mountains, Costilla Massif, southeast of El Vintero, approximately N36°57'20" W105°20'05", forb-rich alpine meadow, 3840 m. elev., 11 Aug. 1979, Peterson 79-34 (NMC); 1.0 km. east northeast of El Vintero summit, *Kobresia* meadow, 3010 m. elev., 15 Aug. 1982, Peterson 82-345 (NMC); 0.67 km. northwest of El Vintero summit, N35°57'50" W105°20'39", wet alpine meadow with *Geum rossii*, *Podistera eastwoodiae*, occasional, 3800 m. elev., 18 Aug. 1982, Peterson 82-429 (NMC). [first known report for NM].

— Al-Shehbaz, 2009 [see Botanical Literature of Interest]

+*Draba heilii* Al-Shehbaz (Brassicaceae, Heil's whitlow-grass): Rio Arriba and Mora counties, above 12,000 ft: see paper for localities. ©

Botany is the natural science that transmits the knowledge of plants.

— Linnaeus



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Kelly Allred
The New Mexico Botanist
MSC Box 3-I
New Mexico State University
Las Cruces, NM 88003
or
Email: kallred@nmsu.edu

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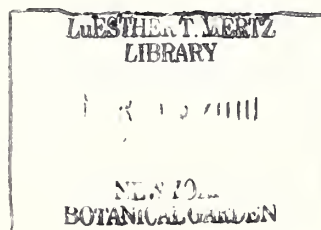
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New Mexico State University
Las Cruces, NM 88003



William R. Buck
Institute of Systematic Botany
New York Botanical Garden
Bronx, NY 10458-5126, U.S.A.

The New Mexico Botanist

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A Newsletter for the flora of New Mexico, from the Range Science Herbarium and Cooperative Extension Service, College of Agricultural, Consumer, and Environmental Sciences, New Mexico State University.

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- Botanical Literature... 4

Verification of *Mimulus suksdorfii* in New Mexico

Chick Keller

4470 Ridgeway, Los Alamos, NM 87544

[Ed. Note: *Mimulus suksdorfii* Gray was listed for New Mexico by Kartesz (1999), but without documentation. Chick shares this interesting anecdote.]

In the state list it says *Minulus suksdorfii* needs verifying. It now has been done, not once but at least three times. The story is worth telling since it is a good example of how these things are done.

I collected a strange *Mimulus* east of Ponderosa at the abandoned Bear Springs Ranger Station. It keyed to *M. floribundus* but had some problems, as Roger Peterson pointed out. Terry Foxx told me she had collected *M. floribundus* in Los Alamos County in 1979 and had put the collections in the UNM herbarium. Recently at the UNM herbarium I was looking at the *M. floribundus* folder and came across Terry's two sheets of very small plants with uncharacteristic leaves. I wondered at that. Looking at drawings of *Minulus* in the Intermountain Flora, vol. 4, I came across what looked like a dead ringer for her collections (but not mine), identified as *M. suksdorfii*. Even the habitat was similar — moist areas in piñon/juniper. I asked Bob Sivinski if he would check those sheets when next he was at UNM. He said he would and also sent back the following:

"I picked-up *M. suksdorfii* in the Zuni Mts. back in 1991, but misidentified it as *M. rubellus*. Glen Rink recently annotated my specimen, which is at UNM, so I'll have something to compare the Foxx specimen with."

Bob did check and verified my tentative id of Terry's two sheets. He also noted another collection by D.A. McCallum, made only 2 days earlier than the one by Terry Foxx.

So we do have *Minulus suksdorfii* in New Mexico: first collected on 6 May 1979 in Cibola County by McCallum and correctly identified as *M. suksdorfii*, but somehow ignored; then collected two days later (8 May 1979) by Foxx in Los Alamos County, but misidentified; then collected in the Zuni Mountains by Sivinski in 1991, but also originally misidentified.

A true collaborative effort spanning 31 years! All this coming to light from wondering about the identification of a different species.

The verified specimens of *Minulus suksdorfii* A. Gray are listed below, in order of collection:

Cibola County: El Moro National Monument, abundant in open places, sandy soil with *Myosurus nitidus* and *Microsteris gracilis*, 7200 ft, 6 May 1979, D.A. McCallum 422 (UNM).

Los Alamos County: Pajarito Canyon near the old spring in the bottom of the canyon, T19N R6E, full bloom amongst the piñon and juniper, 8 May 1979, Foxx and Tierney 608 (UNM) (Det. Bob Sivinski).

Cibola County: Zuni Mountains, Forest Road 50, T12N R14W Sec 19 NW, 2500 m, sandy loam with *Pinus ponderosa*, *Iris missouriensis*, *Agropyron* sp., 3 June 1991, R. Sivinski and K. Lightfoot 1700 (UNM) (Det. Glenn Rink). ☺

Botanice est Scientia Naturalis quae Vegetabilium cognitorem tradit.
— Linnaeus



Plant Distribution Reports

New records and significant distribution reports for New Mexico plants should be documented by complete collection information and disposition of a specimen (herbarium). Exotic taxa are indicated by an asterisk (*), endemic taxa by a cross (+). Comments [in brackets] are the editor's.

— Ohba, H. 2009. [see Botanical Literature of Interest]

Sedum wrightii Gray subsp. *wrightii* (Crassulaceae, Wright's stonecrop): without locality [first report for NM; subsp. *priscum* R.T. Clausen had been reported earlier]

Sedum debile S. Watson (Crassulaceae, feeble stonecrop): without locality [first report for NM]

— Ken Heil [San Juan College, 4601 College Blvd, Farmington, NM 87402]

Lomatium dissectum (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance (Apiaceae, fern-leaf biscuit-root): Rio Arriba County: Jicarilla Apache Indian Reservation, Barrella Canyon, S12, T32N, R3W, 2000 m, 20 May 1996, Ken Heil & Steve O'Kane 9638 (SJNM). Det. Ron Hartman, 2006. [first report for NM]

— Russ Kleinman [25 Oxbow Drive, Silver City, NM 88061]

Simmondsia chinensis (Link) C. Schneider (Simmondsiaceae, jojoba): Hidalgo County: Peloncillo Mountains northeast of Rodeo, NM, near junction of NM80 and NM9, south of Granite Gap and north of Pratt Peak, UTM 12R 0691585 x 3538709, 4450 ft, large open area at base of large volcanic rock outcropping, southwest facing aspect, in dry rock & gravel, population consists of 300+ full-sized shrubs spread throughout steep terrain, with *Larrea tridentata*, *Acacia constricta*, *Opuntia engelmannii*, *Ferocactus wislizeni*, *Fouquieria splendens*, *Muhlenbergia porteri*, & *Eschscholtzia californica*, 12 March 2010, Russ Kleinman 2010-3-12-1 A-D (SNM). [first report for NM]



— Richard Felger [PO Box 1628, Silver City, NM 88062]

Salix bonplandiana Kunth var. *bonplandiana* (Salicaceae, Bonpland's willow): Grant County: Sycamore Canyon, 12S 0713265, 3645655, +17 ft, deep riparian canyon with heavy cattle grazing, canyon sides with juniper-oak-pinyon and grasses, 5010 ft elev, 22 November 2009, Richard Felger 09-101 and Russ Kleinman (ARIZ, ASU, BRIT, NMC, NMCR, TEX, UNM). [first report for NM]



— Chick Keller [4470 Ridgeway, Los Alamos, NM 87544]

Mimulus suksdorfii A. Gray (Plantaginaceae, Suksdorf's monkey-flower). [see article in this issue]

— Al-Shehbaz 2010. [see Botanical Literature of Interest]

**Armoracia rusticana* P. Gaertner (Brassicaceae, horseradish).

Boechera consanguinea (Greene) Windham & Al-Shehbaz (Brassicaceae, scarlet rock-cress).

Boechera duchesneensis (Rollins) Windham, Al-Shehbaz, & Allphin (Brassicaceae, Duchesne rock-cress).



(Plant Reports, continued from page 2)

Boechera gracileuta (Greene) Windham & Al-Shehbaz (Brassicaceae, slender rock-cress).

**Brassica nigra* (Linnaeus) Koch (Brassicaceae, black mustard).

Draba abajoensis Windham & Al-Shehbaz (Brassicaceae, Abajo Mountain whitlow-grass).

Draba crassa Rydberg (Brassicaceae, thick-leaf whitlow-grass).

Lepidium lasiocarpum Nuttall var. *lasiocarpum* (Brassicaceae, southwestern pepperweed).

**Lepidium ruderales* Linnaeus (Brassicaceae, roadside pepperweed).

Lepidium virginicum Linnaeus var. *virginicum* (Brassicaceae, poor-man's pepperweed).

**Raphanus raphanistrum* Linnaeus (Brassicaceae, wild-radish).

**Rorippa austriaca* (Crantz) Besser (Brassicaceae, Austrian yellow-cress). [all first reports for NM]

— Elizabeth Makings [PO Box 874501, Tempe, AZ 85287-4501]

**Hackelochloa granularis* (Linnaeus) Kuntze (Poaceae, pit-grass): Hidalgo County: Peloncillo Mountains, 0.14 miles north of The Bioresearch Ranch, east of Rodeo, 31.73185 -108.9796, Post Office Canyon, open oak woodland, southeast facing slope, volcanic soil, mostly reddish brown rhyolite, with Emory oak, grammas, bluestems, and stem succulents, infrequent annual, 5457 ft, 25 Aug 2008, Elizabeth Makings (with Will Moir) 3049 (ASU). [This marks the first specimen known from NM since Charles Wright's collection of 1851, which has not been located and was of dubious provenance.]

— Richard Spellenberg [New Mexico State University, Las Cruces 88003]

In this very moist spring I was collecting *Eschscholtzia* for Nabeeh Hassan, one of Donovan Bailey's students, when I noticed a *Lasthenia* sporadic among the poppy plants. This species is common in Arizona and California, but I was not aware of it occurring in New Mexico. It turns out that it had been reported from Grant County, based solely on a Greene specimen that could not be located. This new record confirms its presence for New Mexico.

Lasthenia gracilis (A. P. de Candolle) Greene. (Asteraceae, common goldfields): Hidalgo County: 4 km NW of US Hwy 70 on S end of loop to Virden, 1.6 km SW of Crossing of Gila River, 7.6 km SW of Virden, 32°38'39.5"N, 108°57'56.6" (WGS84), 1235 m, rolling gravelly hills of valley side, arid grassland with sporadic *Larrea*, *Prosopis*, *Dichelostemma*, *Calycoses*, *Eschscholtzia*, 7 Apr 2010, R. Spellenberg & N. Zucker 14139 (NMC, NY).

— Richard Worthington [P.O. Box 13331, El Paso, TX 79913]

Amaranthus polygonoides Linnaeus (Amaranthaceae, tropical amaranth): Luna County, Victorio Mts, 3 mi. S of Gage Exit from I-10, old mining town with limestone ridges (T24S, R12W, sec. 33, NW 1/4) 1340 m. 25 August 1984 R.D. Worthington 12429 (UTEP). Det. by Donald B. Pratt. [first record for NM]

— Timothy Lowrey [Biology Dept., 1 University of New Mexico, Albuquerque, NM 87131-0001]

Malacothrix conteri Harvey & A. Gray (Asteraceae, snake's head): Grant County: About 18 air miles NNW of Virden, N32.90204°, W109.04205°, soil from reddish volcanic rock, 1470m, with *Fouquieria splendens*, *Juniperus monosperma*, *Opuntia engelmannii*, *Prosopis glandulosa*, plant with milky sap, only one plant seen, 4 April 2010, R. C. Sivinski 7481 with T.K. Lowrey and P.C. Tonne (UNM). [first report for NM]



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— *Linnaeus*



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Kelly Allred, editor

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A Newsletter for the flora of New Mexico, from the Range Science Herbarium and Cooperative Extension Service, College of Agricultural, Consumer, and Environmental Sciences, New Mexico State University.

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Ephedra coryi in central New Mexico?

Robert C. Sivinski

Energy, Minerals and Natural Resources Department - Forestry Division
P.O. Box 1948, Santa Fe, New Mexico 87504

Recent botanical literature (Stevenson 1993; Gymnosperm Database 2010) and identifications on labels of several herbarium specimens (NMBCC 2007) place *Ephedra coryi* E.L. Reed in the Sierra Oscura and also the San Andres and Caballo mountains in south-central New Mexico. My recent trip to the northern slope of the Sierra Oscura in southeastern Socorro County leads to me to believe that *E. coryi* is not the appropriate name for these large, shrubby plants. The plant I encountered in the Sierra Oscura (R.C. Sivinski 7606 UNM) closely resembles one that I know fairly well from the northwestern part of the state — *Ephedra viridis* Coville.

Ephedra viridis is a vivid green to yellowish-green shrub with broom-like twigs on thick, gray, woody stems from an individual caudex that is usually not rhizomatous (Figure 1.). It has opposite, connate leaves with swollen brownish or eventually black bases, female cones with two dark brown seeds, and 4-5 pairs of scales that are green when fresh, ovate-acute, and membranous-papery only at the margins. Female cones are usually sessile or almost sessile with short, scaly peduncles less than 5 mm long.

Ephedra coryi and *E. viridis* have many similar characteristics, but *E. coryi* usually has female cones with longer peduncles, a very different rhizomatous growth form, and the populations closest to New Mexico grow on sand dunes in the shinnery oak region of west Texas. McLean (1950) and Correll and Johnston (1970) reported *E. coryi* from southeastern New Mexico without specimen citation, but probably from Lea or Eddy counties. The populations on loose sand have extensive, long rhizomes, which sprout clumps of slender, green, above-ground twigs about 2-5 dm tall. Above-ground woody stems, if present, have reddish brown bark and can occasionally extend the plant height to 1 m tall (Reed 1936, Cutler 1939, Vines 1960, Correll and Johnston 1970). In addition to the rhizomatous sand dune form, Powell (1997) is alone in saying *E. coryi* also occurs “in the rocky hills of the Edwards Plateau” where it would likely not have the rhizomes that occur in looser soils. However, the most recent assessment of the Texas distribution of *E. coryi* by Carr (2005) confines it to “dune areas and dry grasslands in the southern plains country” where the populations are rhizomatous.

The unusual plants on the rocky limestone slopes of the Sierra Oscura and San Andres Mountains in New Mexico have apparently been called *E. coryi* by Stevenson (1993) because the females consistently have short (5-10 mm) peduncles and twigs with slightly scabrous ridges (Figures 2 and 3). However, all the *E. viridis* specimens at UNM Herbarium have slightly scabrous twigs and some have unusually long female cone peduncles. For instance, a population of *E. viridis* on the dry, calcareous soils around Tunnel Spring at the north foot of the Sandia Mountains in Sandoval County has only a few female individuals with short (3 mm) peduncles (R.C. Sivinski 5714 UNM). Most of the females in this population have mature peduncles of 5-10 mm in length (rarely up to 21 mm or on long cone stalks with multiple joints) (R.C. Sivinski 7610 UNM). In addition to the Sierra Oscura and San Andres Mountains populations, there are several sterile UNM specimens of *viridis*-like plants from central New Mexico in the Jemez, Ladron, and Sacramento mountains, Chupadera Mesa, and Carrizozo Malpais that should be checked in late May or early June for prominent female cone peduncles. I have also encountered this plant on limestone (in sterile condition) closer to the Rio Grande on the Loma de las Canas ridgeline along Quebradas Road in Socorro County. These central New Mexico populations

(Continued on page 2, *Ephedra*)

Botanice est Scientia Naturalis quae Vegetabilium cognitiorem tradit.

— Linnaeus



(Continued from page 1, *Ephedra*)

have a *viridis*-like growth form of large, 5-15 dm tall, solitary shrubs with thick woody branches bearing gray bark – just like the plants in the Sierra Oscura.

Another taxonomic problem with this species group occurs in the Four-Corners Region where *Ephedra cutleri* Peebles is also separated from *E. viridis* by its rhizomatous growth on sand dunes and longer female cone peduncles – in addition to viscid twigs. These distinguishing features, however, are sometimes inconstant and occasionally produce intermediate or incomplete character states that are difficult to name. Welsh et al. (2003) continued to use the infraspecific name *E. viridis* var. *viscida* (Cutler) L. Benson, instead of the species *E. cutleri*, because “the length of the stalks of the ovulate cones and the viscid condition of the stems forms a continuum with *E. viridis* in a strict sense, especially where the two grow together”. A New Mexico example is the specimen W.L. Wagner 2973 UNM from shallow soil on a sandstone mesa in McKinley County. It has gray bark, non-viscid twigs, and female cone peduncles from 10-22 mm long on a single branch, which is similar to the unusual shrubby green ephedras in central New Mexico.

In summary, the solitary, large, woody ephedras with gray bark and bright green twigs in central New Mexico are taxonomically discordant in *E. coryi*. If the extensively rhizomatous *E. coryi* were in southeastern Socorro County, it would likely be occupying the vast sand dunes just west of Bingham instead of growing with aerial woody branches on the rocky slopes of the Sierra Oscura just two miles east of those dunes. These rocky hill populations have been placed in *E. coryi* only because no other regional name is available for an ephedra with prominent female cone peduncles and non-viscid twigs. Although a poor fit for *E. viridis*, in overall form and habitat they more closely resemble that species and that is the name I will call them until a more suitable taxon is published. Otherwise, the mostly rhizomatous ephedras with viscid twigs on Colorado Plateau sand dunes can be placed in *E. cutleri* and the low, rhizomatous plants with non-viscid twigs and prominent female cone peduncles on the dunes and plains of west Texas are *E. coryi*. New Mexican botanists should make an effort to relocate the real *E. coryi* on dune habitats in the southeastern corner of the state.

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Figure 1. *Ephedra viridis* in the Sierra Oscura, Socorro County, New Mexico.



Figures 2 and 3. Prominent female cone peduncles on *Ephedra viridis* in the Sierra Oscura of New Mexico (R.C. Sivinski 7606 UNM).

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My Point of View

In 1751, Carolus Linnaeus¹ first published *Philosophia Botanica* (The Science of Botany), an amplification of his earlier and much shorter *Fundamenta Botanica* (The Foundations of Botany) of 1736. Both works consisted of his declaration of 365 aphorisms or dicta (one for each day of the year) concerning all aspects of botanical science as then practiced by Linnaeus and his followers. The *Philosophia* defined and illustrated terminology, explained methodology and practice for describing plants, and dictated the rules for naming genera and species. It was, in essence, the first textbook of systematic botany. The Table of Contents only whets the appetite: The Library, Systems, Plants, The Fruit-Body, Sex, Characters, Names, Definitions, Varieties, Synonyms, Sketches, and Potencies.

The *Philosophia* makes for fascinating reading, even today, and I share some snippets [with my few comments in brackets]²:

- “The true botanists have a real basic understanding of botany, and should know how to name all vegetables with intelligible names; they are either collectors or methodizers.
- “The compilers of floras list the vegetables that grow naturally in any particular place. The list should be systematic, so that notice is taken even of those that are absent; those that are present should be recorded with the location, the quality of the soil, the time, and the vernacular names.
- “To the orthodox systematists we owe the clarity and accuracy of botanical science. [Amen!]
- “The fragments [sections or classes] of the natural method are to be sought out studiously. This is the beginning and the end of what is needed in botany. Nature does not make leaps. All plants exhibit their contiguities on either side, like territories on a geographical map.
- “The vegetables comprise seven families: funguses, algae, mosses, ferns, grasses, palms, and plants.
- “The foundation of botany is two-fold, arrangement and nomenclature. The knowledge of botany bears on these hinges; thus all plants become known in a single year, at first sight, with no instructor and without pictures or descriptions, by means of stable recollection. Therefore anyone who knows this is a botanist, and no one else is.
- “If you do not know the names of things, the knowledge of them perishes.
- “Only genuine botanists have the ability to apply names to plants. [That is, those with the ability to apply the names are the genuine botanists.]
- “The endings and pronunciation of generic names should be made easy, as far as possible. Generic names 1½ feet long, those that are difficult to pronounce, or are disgusting, should be avoided.
- “A specific name without a generic one is like a bell without a clapper.”

He even gives the planting order for a floral clock, whose plants will flower from 3 am (*Tragopogon luteum*) to 8 pm (*Hemerocallis fulva*).

Some of the most instructive notes are to be found in the end-section, entitled Memoranda, which was added so that there would be no blank pages in his book. Here we find directives and counsel for the beginning botanist, for establishing an herbarium, and for botanizing, where he advises on clothing, instruments, rules for those who come late, the route, what to gather, and how to give a botanical demonstration along the way.

For my purposes, I wish to call attention to two of Linnaeus's instructions in *Philosophia Botanica*, from which some of us might obtain valuable counsel:

- “Anyone who comes upon a new species should give it a specific name, provided that such a name is needed.
- “The true botanist applies himself to removing plants of no fixed abode to genera.”

Here Linnaeus is saying, “If you find a plant new to science, give it a name!”

I am continually surprised and distraught to learn of botanists (so-called) who discover a new species, and who do nothing about it. As one heavily involved in compiling, arranging, and explaining the plants of New Mexico, I (and many others in the same pursuit)

(Continued on page 4, Point of View)

Botany is the natural science that transmits the knowledge of plants.

— Linnaeus



(Point of View, continued from page 3)

rely on current and accurate accounts of our natural flora. This is what a “true botanist” does, according to Linnaeus, and he³ does it quickly and in a scholarly manner.

Therefore, in the spirit of Linnaeus’s dicta in *Philosophia Botanica*, I offer the following:

1. New species should be named quickly after they are discovered. “Quickly” might be hard to define, but, like something else, we know it when we see it. Any time longer than five years is certainly not quickly, and the line might reasonably be moved to three years, or even two.
2. Priority of doing the naming goes first to the discoverer, second to those he asks to assist, and third to any others.
3. The priority described in Rule Number 2 is rendered of no affect if Rule Number 1 is violated. At this point, anyone can enter the name game.
4. There are no proprietary rights associated with being an “expert” in one particular plant group or another, of being a professional rather than an amateur, or of being at some institution or another: there simply is no “turf.” Anyone can name a plant from any group, so long as they familiarize themselves with and follow the rules of nomenclature.
5. Appropriate acknowledgement may be given to lazy or sluggish discoverers of new species who fail to act. They may be acknowledged (honored is too strong) by use of the *ex* in the authorities following the binomial. For example, if Mr. Jones discovers a new species in an herbarium, and writes upon the sheet a tentative name (such as *Aristida tardissima* n.sp.), but never does anything about it, even after repeated attempts to cajole or inveigle him to action, then a later Mr. Smith could appropriately name the species: *Aristida tardissima* Jones *ex* Smith⁴.

I end with another of Linnaeus’s aphorisms:

“The true botanist advances the science of botany everywhere. The crude showman contributes nothing to the growth of science.”

— Kelly W. Allred

Linnaeus’s proper name was Carl Linnaeus, his father (Nils) having invented the surname when he matriculated at the University of Lund. His made-up name was an allusion to a large and ancient linden tree, “linn” in the local dialect, that grew on their family property, known as Linnegard. Other branches of the family took the name *Lindelius* and *Tiliander* from the same famous tree. The name Linnaeus was thus in Latin form from the beginning. Carolus Linnaeus was enobled in 1761, and took the name Carl von Linné immediately following in 1762. I use here Carolus Linnaeus, as that is how he referred to himself as author in all of his works. [see “*The Linnaean correspondence*, an electronic edition prepared by the Swedish Linnaeus Society, Uppsala, and published by the Centre international d’étude du XVIII^e siècle, Ferney-Voltaire,” accessed 27 August 2010 at <http://linnaeus.c18.net/Doc/lbio.php>.]

²I am indebted to the wonderful translation to English of *Philosophia Botanica* by Stephen Freer, Oxford University Press, paperback edition of 2005.

³I use here, without prejudice, malice, or insensitivity, the classical and conservative generic masculine pronoun to refer to all persons, whether male or female.

⁴Even better, the species could be named for the procrastinating Mr. Jones: *Aristida desidiosa*.

©

Plant Distribution Reports

New records and significant distribution reports for New Mexico plants should be documented by complete collection information and disposition of a specimen (herbarium). Exotic taxa are indicated by an asterisk (*), endemic taxa by a cross (+). Comments [in brackets] are the editor’s.

— Chick Keller [4470 Ridgeway, Los Alamos, NM 87544]

Carex luzulina Olney var *ablata* (L.H. Bailey) F.J. Hermann
(Cyperaceae, woodrush sedge): Rio Arriba County: San Juan Mountains, southeast of Chama and just south of and adjoining the Chama Land & Cattle Company, N36°49’54” W106° 27’ 05”, wet meadow with *Packeria crocata*, *Pedicularis groenlandica*, *Ranunculus alismifolia*, 9800 ft, 1 July 2010, Chick Keller s.n. (UNM). [This is the first report of this species for NM.]

— Nesom, 2010 [see Botanical Literature of Interest]

Verbena livermorensis Nesom (Verbenaceae, Big Bend vervain): Lincoln and Otero counties.

Fraxinus cuspidata Torrey var. *macropetala* (Eastwood) Rehder (Oleaceae): Doña Ana, Hidalgo, McKinley, and Valencia counties.

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Kelly Allred
Email: kallred@nmsu.edu
or
The New Mexico Botanist
Email: kbustos@nmsu.edu

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Kelly Allred, editor

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A Newsletter for the flora of New Mexico, from the Range Science Herbarium and Cooperative Extension Service, College of Agricultural, Consumer, and Environmental Sciences, New Mexico State University.

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Orchids in the Desert: Thomas Kamp Todsén (1918-2010)

Eugene Jercinovic

6285 Algodon Road SW, Deming, NM 88030

Thomas Kamp Todsén was born on October 21, 1918, in Pittsfield, Massachusetts. His father, Lorenz K. Todsén, hailed from Norway although the family was from Denmark. Lorenz had a degree in engineering and immigrated to the United States in 1903, taking a job with General Electric in Pittsfield. There he met a Danish girl named Ellen Christensen. They married in 1910. The couple had three children. Tom was in the middle with an older brother Birger and a younger sister Erna.

In 1923 Lorenz died. Ellen and the children moved to Boston for two years and then settled in St. Petersburg, Florida. Tom attended public schools there, graduating the spring of 1935. He decided to enter the University of Florida at Gainesville that fall. His high school counselor was becoming a Dean there and got Tom a job working on a maintenance crew. Tom also got assistance from a wealthy uncle, the Norwegian Consul to Portugal, who provided the \$150 per semester. At that time, tuition each semester was \$34, including lab fees, so life was not uncomfortable for the undergrad. Early in his college career, Tom developed an interest in plants. Encouraged by a professor, he began collecting plants and became familiar with the herbarium on the third floor of the biological sciences building. On his trips up there, he took notice of a young clerk named Margaret Dorsey, who was working in the School of Forestry on the fourth floor. Later he discovered that his roommate was dating a close friend of Margaret. They double dated and Tom and Margaret became close friends. Tom graduated in 1939 with a Bachelor of Science in chemistry. Margaret and Tom were married on August 4, 1939. The couple personally collected white and yellow orchids south of Lake Okeechobee for the ceremony.

Tom stayed at the University of Florida to pursue an advanced degree. He completed his Master of Science in December of 1941 in sanitary chemistry. Shortly thereafter he accepted a civil service job. With the fateful events of that December, it was inevitable that Tom would hear from the military. On February 1, 1942, he was ordered to report for training at Huntsville, Alabama. Although initially commissioned in the infantry, he was transferred to Army Chemical Warfare in March. He spent the remainder of WWII with Chemical Warfare Group. He was discharged from the service on August 16, 1947 with the rank of Captain, and continued in the Army Reserve until 1962. In the fall of 1947 he was back in Gainesville in a Ph.D. program. He received his doctorate in organic chemistry in the spring of 1950.



(Continued on page 2, Todsén)

Botanice est Scientia Naturalis quae Vegetabilium cognitionem tradit.

— *Linnaeus*



(Todsén, continued from page 1)

That summer he accepted a nine month position in Las Cruces teaching at the New Mexico College of Agriculture and Mechanic Arts (now NMSU) starting in the fall of 1950. In June of 1951, he was offered a GS-9 job as a chemist at the White Sands Missile Range. He started work that summer. He rapidly advanced through the bureaucracy, becoming Chief Chemist, Chief of the Field Test Committee of the AEC/DOD, Deputy Director of the Army Material Test and Evaluation Center, and Chief of the Special Project on surface-to-surface missiles. He also co-authored the first test manual for the Honest John missile. By the mid-1970's the job "wasn't as pleasant" and he officially retired in 1978.

Tom's early interest in plants did not diminish during these years. He carried his fascination with orchids to New Mexico. In his few unoccupied moments he began to explore the mountains of New Mexico for orchids and other plants. After his retirement and the death of Margaret in 1987, his efforts intensified. He was the first to collect *Spiranthes parasitica* (now *Schiedeella arizonica*) in the state. He discovered *Hexalectris revoluta* in the Guadalupe Mountains, was the first to collect *Hexalectris spicata* in New Mexico and the only person to collect it in the Sacramento Mountains and the Black Range, found *Corallorhiza wisteriana* in the Sacramentos, and described a yellow form of *Corallorhiza striata* from Hyde Park. Tom was once contacted by Richard Worthington of the University of Texas at El Paso who had run across an odd orchid in the Sacramentos. Richard gave Tom the location and indicated that he had flagged the bush under which the orchid could be found. Tom visited the area but the flag had disappeared. Tom contacted Richard who revisited the site and reflagged the bush. Tom returned, located the bush, and recognized the orchid. Richard Worthington and Tom have the only known collections of the dwarf rattlesnake orchid, *Goodyera repens*, from Otero County.

Tom also began taking two or three trips a year south of the Mexican border in search of orchids. He visited and collected in almost every Mexican state all the way to Chiapas and made forays into Guatemala, Costa Rica, and Belize. In Nuevo Leon he was involved in a bit of orchid intrigue. Tom's experience with orchids in Florida had left him with the knowledge of the green fly orchid, *Epidendrum magnoliae*, which grows on magnolia trees from North Carolina to Florida and across the Deep South to Louisiana. On one of his adventures near Monterrey he discovered green fly orchids growing on live oaks. His Mexican collections were placed at the Asociación Mexicana de Orquideología (AMO). In addition to his studies in Mexico and Central America, he was invited to perform an orchid survey of the island of Anguilla in the Leeward Islands of the Lesser Antilles. Tom has contributed much to the study of distributions and ranges of variation of New Mexico's orchids and wrote a key to the orchids of the state. (*The New Mexico Botanist* 14: 1-2)

Tom's botanical work was not restricted to orchids. His position with the White Sands Missile Range gave him unfettered access to restricted areas of the San Andres Mountains, which he investigated fully. He enjoyed exploring for plants all over the state and spent as much time as he could in the field. As a result, he collected a number of plants new to the state's flora which are listed below.

APIACEAE: *Eryngium lemmonii* Coulter & Rose, CHIHUAHUA MOUNTAIN ERYNGO, 1972, Hidalgo Co.

ASTERACEAE: *Erigeron scopulinus* Nesom & Roth, ROCKY MOUNTAIN FLEABANE, 1981, Sierra Co.: *Perityle lemmonii* (Gray) MacBride, LEMMON'S ROCK-DAISY, 1971, Hidalgo Co.; *Barkleyanthus salicifolius* (Kunth) H. Robinson & Brettell (as *Senecio salignus*), BARKLEY'S GROUNDSEL, 1969, Hidalgo Co.

CARYOPHYLLACEAE: *Silene plankii* C.L. Hitchcock & Macguire (first since original collection in 1895), PLANK'S CATCHFLY 1970, Doña Ana Co.

LILIACEAE: *Erythronium grandiflorum* Pursh subsp. *grandiflorum*, YELLOW AVALANCHE-LILY, 1996, Rio Arriba Co.

LYTHRACEAE: *Cuphea wrightii* Gray, WRIGHT'S WAX-WEED, 1969, Grant Co.

MALPIGHIACEAE: *Aspicarpa hirtella* L.C.M. Richard, CHAPARRAL ASP-HEAD, 1979, Hidalgo Co.

PLANTAGINACEAE: *Mecardonia procumbens* (P. Miller) Small, BABY-JUMP-UP, 1984, Hidalgo Co.

POLYGALACEAE: *Polygala rimulicola* Steyermark var. *rimulicola*, STEYERMARK'S MILKWORT, 1972, Otero Co.

RUBIACEAE: *Diodia teres* Walter var. *teres* (as *Diodia teres* Walter var. *setifera* Fernald), POOR JOE, 1982, Hidalgo Co.

SAXIFRAGIACEAE: *Heuchera glomerulata* Rosendahl, Butters & Lakela, CHIRICAHUA ALUMROOT, 1982, Hidalgo Co.; *Heuchera sanguinea* Engelm., CORAL-BELLS, 1966, Hidalgo Co.

More significantly, Tom discovered and described three plants new to science:

ASTERACEAE, *Perityle stanrophylla* (Barneby) Shinnars var. *homoflora* Todsén, NEW MEXICO ROCK-DAISY, 1983, Sierra County, San Andres Mountains

ASTERACEAE, *Polygala rimulicola* Steyermark var. *mes-calerorum* Wendt & Todsén, MESCALERO MILKWORT, 1982, Doña Ana County, San Andres Mountains

LOASACEAE, *Mentzelia conspicua* T.K. Todsén, CHAMA BLAZING STAR, 1999, Rio Arriba County, El Vado Dam

In addition, in 1978 he collected an unusual *Hedeoma* in the San Andres Mountains in Sierra County. It also turned out to be new to science, and in 1979 Robert S. Irving of the University of Nebraska named it for Tom as *Hedeoma todsenii* Irving, TODSEN'S FALSE-PENNYROYAL. His name will also remain attached to two land snails of his discovery, the Doña Ana talus snail, *Sonorella todseni*, and the Maple Canyon woodland snail, *Ashmunella todseni*, as well as the fossil snail, *Eleocaris todseni*, which he discovered near Rincon. In 1978, he established *Scrophularia laevis*, the Organ Mountain figwort, as a legitimate species. In 1997, he established *Malaxis porphyrea*, as the correct name of Arizona and New Mexico purple malaxis (Cochise adder's-mouth) plants previously placed in *M. ehrenbergii* or *M. wendtii*. In 1998, he resurrected *Penstemon metcalfei* as a valid species.

His involvement with plants went beyond the scientific to the artistic with his photography. He also had interest in things

(Continued on page 3, Todsén)



(Todsén, continued from page 2)

other than biological. He spent considerable time studying New Mexico territorial postmarks working with Sheldon Dyke, a physicist at Sandia Corporation in Albuquerque. Tom authored the 10th edition of the New Mexico Territorial Postmark Catalog in 1994.

Tom died on December 22, 2010 at an Alzheimer's facility in Abilene, Texas, near his son, William (Larry) and family.

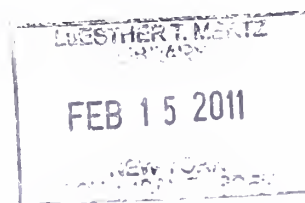
Another son, Thomas (Andy) resides in Las Cruces. Tom's 92 years were full. He had a valuable and very successful career at White Sands. His tireless persistence and energy in understanding and hunting plants, and his remarkable ability to notice new and unusual types allowed him to make important insights into the nature of New Mexico's orchids and to contribute much to the elucidation of many other groups and the botany of the state.

☺

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Plant Distribution Reports

New records and significant distribution reports for New Mexico plants should be documented by complete collection information and disposition of a specimen (herbarium). Exotic taxa are indicated by an asterisk (*), endemic taxa by a cross (+). Comments [in brackets] are the editor's.

— Richard Worthington [P.O. Box 13331, El Paso, TX 79913]

Carex frankii Kunth (Cyperaceae, Frank's sedge): Eddy County: Guadalupe Mts, Lincoln National Forest, Sitting Bull Falls Recreation Area, T24S, R22E sec. 4, stream above the falls, 18 July 1998, R.D. Worthington 27693 (UTEP). Det: A.A. Reznicek. [first verified occurrence of this species in NM]

— Eugene Jercinovic [see Botanical Literature of Interest]

Boerhavia pterocarpa S. Watson (Nyctaginaceae, winged spiderling). [first report for NM]

— Michael Windham [Duke University, Biology Dept., Box 90338, Durham, NC 27708]

Cheilanthes horridula Maxon (Pteridaceae, horrid lipfern): Eddy County: NE of Whites City along rocky draw on high ridge overlooking US 180, ca. 2.67 km SE of Jurnigan Spring, T24S, R26E, Sec. 19, N32°12'28" W104°20'15" (WGS84 Datum), 3700 ft, 8 Aug 2007, M.D. Windham 3495 (DUKE, NMC, UNM). [re-establishes and confirms this species in NM]

— Robert Sivinski [NM Forestry Division, P.O. Box 1948, Santa Fe, NM 87504] and Phil Tonne [Natural Heritage New Mexico, University of New Mexico, Albuquerque, NM 87131]

Hypericum mutilum Linnaeus (Clusiaceae: dwarf St. John's-wort): Hidalgo County, Diamond A Ranch, south end of Animas Valley just north of Mexican border, Lang Cienega at Cienega Spring on wet organic soil, N31.33673 W108.81068 NAD83, 5150 ft, 16 Sep 2010, R.C. Sivinski with P. Tonne 7851 (UNM). [first report of this small-flowered annual species from New Mexico]

— Ben S. Legler [see Legler 2010, in Botanical Literature of Interest, for complete collection information]

Heterotheca pumila (Greene) Semple (Asteraceae, alpine golden-aster): Taos County. [first report]

Draba streptobrachia R.A. Price (Asteraceae, alpine whitlow-grass): Taos County. [first report]

Carex microglochin Wahlenberg subsp. *microglochin* (Cyperaceae, few-seeded sedge): Colfax County. [first report]

Carex nelsonii Mackenzie (Cyperaceae, Nelson's sedge): Taos County. [first report]

Eriophorum scheuchzeri Hoppe (Cyperaceae, Scheuchzer's cotton-grass): Taos County. [first report]

Kobresia simpliciuscula (Wahlenberg) Mackenzie (Cyperaceae, simple kobresia): Colfax County. [first report]

Juncus alpinoarticulatus Chaix (Juncaceae, northern rush): Colfax County. [first report]

Juncus biglumis Linnaeus (Juncaceae, two-flowered rush): Taos County. [first report]

Juncus parryi Engelman (Juncaceae, Parry's rush): Taos County. [first report]

Juncus triglumis Linnaeus var. *triglumis* (Juncaceae, three-flowered rush): Taos County. [first report]

Botrychium hesperium (Maxon & Clausen) W.H. Wagner & Lellinger (Ophioglossaceae, western moonwort): Colfax, Rio Arriba, Santa Fe, & Taos counties. [first report]

Botrychium lineare W.H. Wagner (Ophioglossaceae, slender moonwort): Taos County. [first report]

Botrychium minganense Victorin (Ophioglossaceae, Mingan moonwort): Cibola, Colfax, Lincoln, Rio Arriba, Santa Fe, & Taos counties. [first report]

Botrychium multifidum (S.G. Gmelin) Trevisan (Ophioglossaceae, leathery moonwort): Taos County. [first verified report]

Botrychium pinnatum H. St. John (Ophioglossaceae, northwestern moonwort): Colfax, Santa Fe, & Taos counties. [first report]

Botrychium tunux Stensvold & Farrar (Ophioglossaceae, moosewort): Taos County. [first report]

Listera borealis Morong (Orchidaceae, northern twayblade): Taos County. [first report]

**Bromus squarrosus* Linnaeus (Poaceae, corn brome): Colfax County. [first report]

Festuca hallii (Vasey) Piper (Poaceae, Hall's fescue): Taos County. [first report]

Ptilagrostis porteri (Rydberg) W.A. Weber (Poaceae, Porter's false-needlegrass): Colfax County. [first report]

Polemonium occidentale Greene var. *occidentale* (Polemoniaceae, western Jacob's-ladder): Colfax, Rio Arriba, & Taos counties. [first report]

Eriogonum arcuatum Greene var. *xanthum* (Small) Reveal (Polygonaceae, Baker's wild-buckwheat): Taos County. [first report]

Crataegus chrysocarpa Ashe var. *chrysocarpa* (Rosaceae, red hawthorn): Colfax County. [first report]

Potentilla nivea Linnaeus (Rosaceae, snow cinquefoil): Taos County. [first verified report]

**Rosa canina* Linnaeus (Rosaceae, dog rose): Colfax County. [first report]

— Robert Sivinski [NM Forestry Division, P.O. Box 1948, Santa Fe, NM 87504]

Ephedra coryi E.L. Reed (Ephedraceae, Cory's ephedra): Eddy County, County Road 217, 1.9 miles north of U.S. Hwy 82 and Loco Hills, in sand shinnery on BLM land, T17S R30E Sec 16, 1125 m, 16 Apr 2002, R.S. Peterson 02-46 (NM Natural History Institute Herbarium). [validates this rhizomatous psammophile for NM]

Rotala ramosior (Linnaeus) Koehne (Lythraceae, lowland toothcup): The earlier report of this species (Sivinski, R. 2002. New plant distribution reports. The New Mexico Botanist 24:7.) was in error; the identification of the plant in question is corrected to *Ludwigia palustris*. *Rotala ramosior* has yet to be collected in NM.

— Relf L. Price [3521 Pueblo Drive, Los Alamos, NM 87545]

Warnstorffia fluitans (Hedwig) Loeske (Bryophyta: Musci: Amblystegiaceae): Sandoval County: Jemez Mountains, Valles Caldera National Preserve, Alamo Fen, Caribbean Pond, N35° 55'01.47" W106°35'41.16", submerged in artificial acidic pond, pH1-4, associated species includes the xanthophyte *Tribonema affine*, 8500 ft, 27 June 2008, R.L. Price 1 (COLO, VCNP). Det. W.A. Weber. [This is the first report of this species from New Mexico]

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Botany is the natural science that transmits the knowledge of plants.

— Linnaeus



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Kelly Allred

Email: kallred@nmsu.edu

or

The New Mexico Botanist

Email: kbustos@nmsu.edu

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Kelly Allred, editor



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August 9, 2011

A Newsletter for the flora of New Mexico, from the Range Science Herbarium and Cooperative Extension Service, College of Agricultural, Consumer, and Environmental Sciences, New Mexico State University.

Third Statistical Summary of the Flora of New Mexico

Kelly W. Allred

Range Science Herbarium (NMCR), Department of Animal & Range Sciences
New Mexico State University, Las Cruces, New Mexico 88003 kallred@nmsu.edu

Previous statistical summaries of the vascular flora of New Mexico appeared in issue 45 (October 16, 2008) and issue 28 (September 19, 2003) of The New Mexico Botanist. Recent tabulations of the flora facilitate a third accounting. This summation expands our inventory to include the mosses (Bryophyta).

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Group	Families	Genera	Species	Total Taxa
Mosses	38	130	299	309
Ferns & Allies	13	30	87	91
Gymnosperms	3	7	29	30
Dicotyledonous Plants	113	817	2878	3234
Monocotyledonous Plants	30	200	770	835
Vascular Plants	159	1054	3764	4190
Totals	197	1184	4063	4499

Mosses	Family	Genera	Species	Total Taxa
	Amblystegiaceae	17	19	19
	Andreaeaceae	1	1	1
	Anomodontaceae	1	3	3
	Aulacomniaceae	1	1	1
	Bartramiaceae	3	8	11
	Brachytheciaceae	3	17	18

Botanice est Scientia Naturalis quae Vegetabilium cognitiorem tradit.
— Linnaeus



Mosses continued	Family	Genera	Species	Total Taxa
	Bryaceae	8	23	23
	Bryoxiphiaceae	1	1	1
	Climaceae	1	2	2
	Dicranaceae	7	16	16
	Ditrichaceae	4	4	5
	Encalyptaceae	1	3	3
	Entodontaceae	1	3	3
	Fabroniaceae	1	2	2
	Fissidentaceae	1	6	6
	Fontinalaceae	1	3	3
	Funariaceae	4	9	10
	Gigaspermaceae	1	1	1
	Grimmiaceae	4	24	24
	Hedwigiaceae	2	2	2
	Hylocomiaceae	2	2	2
	Hypnaceae	10	14	15
	Leskeaceae	8	12	13
	Meesiaceae	1	1	1
	Mniaceae	4	18	18
	Neckeraceae	2	2	2
	Orthotrichaceae	2	10	10
	Plagiotheciaceae	1	2	2
	Polytrichaceae	4	7	7
	Pottiaceae	24	72	74
	Ptychomitriaceae	1	1	1
	Rhytidiaceae	1	1	1
	Sphagnaceae	1	1	1

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Mosses continued	Family	Genera	Species	Total Taxa
	Splachnaceae	1	1	1
	Stereophyllaceae	1	1	1
	Tetraphidaceae	1	1	1
	Thuidiaceae	2	3	3
	Timmiaceae	1	2	2
Totals	38	130	299	309
Ferns & Allies	Aspleniaceae	1	4	4
	Azollaceae	1	1	1
	Dennstaedtiaceae	1	1	1
	Dryopteridaceae	6	13	13
	Equisetaceae	1	6	6
	Isoetaceae	1	1	1
	Lycopodiaceae	2	3	3
	Marsiliaceae	1	1	1
	Ophioglossaceae	4	11	11
	Polypodiaceae	1	2	2
	Pteridaceae	9	32	35
	Salviniaceae	1	1	1
	Selaginellaceae	1	11	12
Totals	13	30	87	91
Gymnosperms	Cupressaceae	2	8	8
	Ephedraceae	1	6	6
	Pinaceae	4	15	16
Totals	3	7	29	30



Dicotyledonous Plants	Family	Genera	Species	Total Taxa
	Acanthaceae	10	11	11
	Adoxaceae	2	3	5
	Aizoaceae	2	2	2
	Amaranthaceae	9	35	35
	Anacardiaceae	2	6	12
	Apiaceae	36	65	67
	Apocynaceae	5	12	15
	Araliaceae	2	2	2
	Aristolochiaceae	1	2	2
	Asclepiadaceae	4	35	36
	Asteraceae	189	618	713
	Berberidaceae	1	7	7
	Betulaceae	3	5	5
	Bignoniaceae	3	3	4
	Bixaceae	1	1	1
	Boraginaceae	15	62	73
	Brassicaceae	50	168	183
	Buddlejaceae	1	1	1
	Cactaceae	14	59	67
	Campanulaceae	4	9	10
	Cannabaceae	3	6	6
	Caprifoliaceae	5	19	19
	Caryophyllaceae	19	66	70
	Celastraceae	2	2	2
	Ceratophyllaceae	1	1	1
	Chenopodiaceae	20	64	75
	Cistaceae	1	2	2



Dicotyledonous Plants	Family	Genera	Species	Total Taxa
	Cleomaceae	4	10	10
	Convolvulaceae	7	47	50
	Cornaceae	1	2	2
	Crassulaceae	3	9	11
	Crossosomataceae	2	2	3
	Cucurbitaceae	12	18	18
	Elaeagnaceae	2	3	3
	Elatinaceae	2	4	4
	Ericaceae	10	19	19
	Euphorbiaceae	11	72	74
	Fabaceae	58	270	239
	Fagaceae	1	15	15
	Fouquieriaceae	1	1	1
	Frankeniaceae	1	1	1
	Fumariaceae	1	2	3
	Garryaceae	1	2	2
	Gentianaceae	10	22	24
	Geraniaceae	2	8	8
	Grossulariaceae	1	12	13
	Haloragaceae	1	5	5
	Heliotropaceae	1	4	5
	Hydrangeaceae	4	5	9
	Hydrophyllaceae	5	33	34
	Hypericaceae	1	3	3
	Juglandaceae	1	3	3
	Koeberliniaceae	1	3	3
	Lamiaceae	21	65	72



Dicotyledonous Plants	Family	Genera	Species	Total Taxa
	Lentibulariaceae	1	1	1
	Linaceae	1	15	15
	Loasaceae	2	24	26
	Loganiaceae	1	1	1
	Lythraceae	4	6	6
	Malpighiaceae	2	2	2
	Malvaceae	14	46	47
	Meliaceae	1	1	1
	Menyanthaceae	1	1	1
	Molluginaceae	1	2	2
	Moraceae	2	3	3
	Myrsinaceae	4	5	5
	Nyctaginaceae	10	37	44
	Nymphaeaceae	2	3	3
	Oleaceae	5	10	12
	Onagraceae	9	59	70
	Orobanchaceae	10	45	48
	Oxalidaceae	1	5	6
	Papaveraceae	3	9	10
	Parnassiaceae	1	2	2
	Passifloraceae	1	1	1
	Pedaliaceae	1	4	4
	Phytolaccaceae	2	2	2
	Plantaginaceae	18	94	104
	Platanaceae	1	1	1
	Plumbaginaceae	1	1	1
	Polemoniaceae	11	56	62



Dicotyledonous Plants	Family	Genera	Species	Total Taxa
	Polygonaceae	12	90	98
	Portulacaceae	9	30	32
	Primulaceae	2	9	9
	Rafflesiaceae	1	1	1
	Ranunculaceae	13	65	68
	Resedaceae	1	1	1
	Rhamnaceae	6	14	15
	Rosaceae	25	84	100
	Rubiaceae	7	23	27
	Rutaceae	3	3	8
	Salicaceae	2	34	39
	Santalaceae	1	1	1
	Sapindaceae	3	5	9
	Sapotaceae	1	1	1
	Saururaceae	1	1	1
	Saxifragaceae	6	24	24
	Scrophulariaceae	3	8	8
	Simaroubaceae	1	1	1
	Simmondsiaceae	1	1	1
	Solanaceae	9	46	52
	Sterculiaceae	1	3	3
	Tamaricaceae	1	3	3
	Theophrastaceae	1	2	2
	Ulmaceae	1	1	1
	Urticaceae	3	6	7
	Verbenaceae	8	33	35
	Violaceae	2	8	8



Dicotyledonous Plants	Family	Genera	Species	Total Taxa
	Viscaceae	2	12	12
	Vitaceae	3	5	5
	Zygophyllaceae	5	7	7
Totals	113	817	2878	3234
Monocotyledonous Plants	Family	Genera	Species	Total Taxa
	Agavaceae	2	16	20
	Alismataceae	3	11	11
	Alliaceae	1	12	13
	Amaryllidaceae	1	1	1
	Anthericaceae	2	2	2
	Asparagaceae	1	1	1
	Asphodelaceae	1	1	1
	Bromeliaceae	1	1	1
	Commelinaceae	2	5	6
	Convallariaceae	2	3	3
	Cyperaceae	14	149	151
	Hyacinthaceae	1	1	1
	Hydrocharitaceae	4	7	7
	Hypoxidaceae	1	1	1
	Iridaceae	2	7	7
	Juncaceae	2	29	31
	Juncaginaceae	1	2	2
	Lemnaceae	2	9	9
	Liliaceae	7	11	12
	Melanthiaceae	4	7	7
	Nolinaceae	2	6	6



Monocotyledonous Plants	Family	Genera	Species	Total Taxa
	Orchidaceae	14	33	37
	Poaceae	119	428	476
	Pontederiaceae	1	2	2
	Potamogetonaceae	2	13	15
	Ruppiaceae	1	1	1
	Sparganiaceae	1	3	3
	Themidaceae	3	3	3
	Typhaceae	1	3	3
	Zanichelliaceae	1	1	1
Total	30	200	770	835

The largest families in each group, by number of species, is as follows:

Mosses	Pottiaceae	72	Monocotyledonous Plants	Poaceae	428
	Grimmiaceae	24		Cyperaceae	149
	Bryaceae	23		Orchidaceae	33
	Amblystegiaceae	19			
	Mniaceae	18			
Ferns & Allies	Pteridaceae	32	Top ten families over-all:	Asteraceae	618
	Dryopteridaceae	13		Poaceae	428
	Ophioglossaceae	11		Fabaceae	270
	Selaginellaceae	11		Brassicaceae	168
Gymnosperms	Pinaceae	15		Cyperaceae	149
				Plantaginaceae	94
Dicotyledonous Plants	Asteraceae	618		Polygonaceae	90
	Fabaceae	270		Rosaceae	84
	Brassicaceae	168		Euphorbiaceae	72
	Plantaginaceae	94		Caryophyllaceae	66



Plant Distribution Reports

New records and significant distribution reports for New Mexico plants should be documented by complete collection information and disposition of a specimen (herbarium). Exotic taxa are indicated by an asterisk (*), endemic taxa by a cross (+). Comments [in brackets] are the editor's.

— Richard Worthington [P.O. Box 13331, El Paso, TX 79913]

Ptychomitrium serratum (C. Mull.) Bruch. & Schimp.

(Bryophyta, Ptychomitriaceae): Eddy County: Guadalupe Mts, Fir Canyon, N32° 04.986' W104° 45.273', limestone canyon bottom, woodland with Douglas fir, growing on limestone rock, 6300 ft, 21 Oct 2007, R.D. Worthington 35044 (COLO, NMCR, NYS, UTEP). [determined by William A. Weber; also just reported in Miller & Robinson 2010 (see Botanical Literature of Interest)]

Grimmia trichopterylla Grev. (Bryophyta, Grimmiaceae):

Lincoln County: Capitan Mts, upper Copeland Canyon n of the Wilderness marker, wooded canyon bottom on shaded igneous boulder, 6900 ft, 13 June 2007, R.D. Worthington 34828.4 (COLO, NMCR, UTEP). [determined by William A. Weber; first report for NM]

— Costea & Stefanovic [see Costea & Stefanovic 2010 in Botanical Literature of Interest]

Cuscuta liliputana Costea & Stefanovic (Convolvulaceae, liliputan dodder): southern New Mexico. [first report for NM of this new species]

— Mark Porter [see Porter, 2011, in Botanical Literature of Interest]

Aliciella cliffordii J.M. Porter (Polemoniaceae, Clifford's gilia): San Juan County. [first report for NM of this new species]

Ipomopsis congesta (Hooker) V.E. Grant subsp. *matthewii*

J.M. Porter (Polemoniaceae, Matthew's skyrocket): San Juan County. [first report for NM of this new subspecies]

— Timothy Lowrey [Herbarium, Museum of Southwestern Biology, University of New Mexico, Albuquerque, NM]

**Gnaphalium uliginosum* Linnaeus (Asteraceae, marsh cudweed): New Mexico: Taos County: Upper Rio Grande Watershed, Rio Grande Gorge State Park, ca. 1.6 miles north of Pilar, UTM: 429650E 4016474 NAD83 Zone 13, 6660 ft, with *Salix exigua* and *Agrostis gigantea*, 9/1/1992, Juanita Ladyman 92RW012-F9 (UNM). [first report for NM]

— Jim McGrath [20 Robin Ct., Edgewood, NM]

Schoenus nigricans Linnaeus (Cyperaceae, black bog-rush): Otero County: Karr Canyon, roadside alkaline seep shaded by *Prunus serotina* and *Quercus gambelii*, UTM: 423492E, 3644047N (Datum: NAD 27) (CONUS), NW/4 NE/4 sec 9, T16S, R11E, growing in dense clump with *Aquilegia chrysantha*, *Cirsium wrightii*, *Campanula rotundifolia*,

Rosa woodsii, *Clematis*, *Triglochin maritimum*, and *Prunella vulgaris*, 6900 ft, 2 August 2010, Jim McGrath 964 (UNM).

— Kelly W. Allred [New Mexico State University, MSC 3-1, Las Cruces, NM 88003]

Rhabdoweisia crispata (Dickson ex Withering) Lindberg (Bryophyta, Dicranaceae): Grant County: Black Range, Gila National Forest, Spring Canyon off of hwy 152, about 1.5 miles south of Railroad Canyon, N32° 54.1608 W107° 49.0734, mixed conifer forest dominated by ponderosa pine, in moist shaded spots, on large loose bark slabs, 7040 ft, 14 Aug 2010, Kelly W. Allred s.n. & Russ Kleinman (COLO, NMCR). [determined by William A. Weber; first report for NM]

Ditrichum gracile (Mitten) Kuntze (Bryophyta, Ditrichaceae): Mora County: Sangre de Cristo Mts, Pecos Wilderness, Pecos Baldy Lake, subalpine coniferous forest with bristlecone pine and spruce, boggy ground at edge of lake, 11500 ft, 30 July 1997, Kelly W. Allred 6861 (COLO, NMCR). [determined by William A. Weber; first report for NM]

Pylaisia selwynii (Kindberg) Crum, Steere, & L.E. Anderson (Bryophyta, Hypnaceae): Otero County: Sacramento Mts, Lincoln National Forest, along Carr Gap Canyon Road (Forest Road 607), N32.9203° W105.46512°, mixed conifer forest, growing in full shade on dry boulders, 6700 ft (2040 m), 25 March 2010, Kelly W. Allred 10015 (COLO, NMCR). [determined by William A. Weber; first report for NM]

— Bob Sivinski [P.O. Box 1948, Santa Fe, NM 87504]

Linum subteres (Trelease) Winkler (Linaceae, sprucemont flax): Sandoval County: collected west of San Ysidro on tan sandstone, T15N R1E, 29 May 1981, P. Knight 1441 UNM. [reported by Heil (The New Mexico Botanist 24:1-4, 2002), but that plant was determined to be *Linum aristatum*; this is the first verified report of this species for NM]

Linum allredii Sivinski & Howard (Linaceae, Allred's flax): New Mexico, Eddy County, and Texas, Culberson County. See Sivinski & Howard (2011), in Botanical Literature of Interest, for full distribution. [first report for NM]

Linum berlandieri Hooker var. *filifolium* (Shinners) C.M. Rogers (Linaceae, Berlandier's yellow-flax): Eddy County: Chihuahuan Desert 8 miles northwest of Carlsbad, May 1961, L.D. Potter 333 (UNM). [first report for NM]

Botany is the natural science that transmits the knowledge of plants.

— Linnaeus



Botanical Literature of Interest

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